

**GENERAL PERMITS in MASSACHUSETTS  
PCN DETERMINATION OF ELIGIBILITY CHECKLIST/MFR -**

**I. GENERAL INFORMATION**

Applicant:	MassDOT - Highway Division	Application Number:	NAE-2008-03324
Jurisdiction:	<input checked="" type="checkbox"/> § 404	<input checked="" type="checkbox"/> §10	<input type="checkbox"/> §103
Site address & waterway:	Water Street (Route 35) over Waters River, Danvers		
Work Description:	<p>Reissuance of the authorization originally issued under the previous GP that expired on January 20, 2015. The original authorization was associated with the replacement of the bridge (No. D-03-013) conveying Water Street (Route 35) over the Waters River in Danvers. The authorization letter, including a subsequent modification, authorized the discharge of <b>28,362 square feet</b> of fill into waters of the U.S., as well as the excavation of <b>5,000 cubic yards</b> of sediment (with upland disposal). Approximately <b>8,450 square feet</b> of river bottom would be restored. See original authorization and subsequent modification for additional details. Applicant has requested that reissuance letter contain the same 12 special conditions contained in the original authorization letter, as modified, and has requested a waiver of all TOY restrictions within the General Permit (original authorization contained no TOY restriction). Note that the work has been underway since March, 2013 and is approximately 75% complete.</p>		
Resource area(s) affected:	<p>28,362 Square feet Estuarine Subtidal  Choose an item. Choose an item.  Choose an item. Choose an item.  Choose an item. Choose an item.  Others or add more specificity (such as vernal pool): N/A  Aquatic resource impacts are within the Coastal service area</p>		
Permit history:	The project was previously authorized on March 9, 2010, under the previous GP that expired on January 20, 2015. The authorization was subsequently modified on January 7, 2013.		
Date forwarded to agencies	1/14/2016	Agency comments due by:	1/28/2016

**II. REVIEW OF TERMS OF GENERAL PERMIT**

- ☐ GP 1. Repair, Replacement and Maintenance of Authorized Structures and Fills  
☐ GP 2. Moorings  
☐ GP 3. Pile-Supported Structures, Floats and Lifts  
☐ GP 4. Aids to Navigation, and Temporary Recreational Structures  
☐ GP 5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal and Relocation  
☐ GP 6. Discharges of Dredged or Fill Material Incidental to the Construction of Bridges  
☐ GP 7. Bank and Shoreline Stabilization  
☐ GP 8. Residential, Commercial and Institutional Developments, and Recreational Facilities  
☐ GP 9. Utility Line Activities  
☒ GP 10. Linear Transportation Projects Including Stream Crossings  
☐ GP 11. Mining Activities  
☐ GP 12. Boat Ramps and Marine Railways  
☐ GP 13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects  
☒ GP 14. Temporary Construction, Access, and Dewatering  
☐ GP 15. Reshaping Existing Drainage Ditches and Mosquito Management  
☐ GP 16. Oil Spill and Hazardous Material Cleanup  
☐ GP 17. Cleanup of Hazardous and Toxic Waste

- ☐ GP 18. Scientific Measurement Devices  
☐ GP 19. Survey Activities  
☐ GP 20. Agricultural Activities  
☐ GP 21. Fish and Wildlife Harvesting and Attraction Devices and Activities  
☐ GP 22. Habitat Restoration, Establishment and Enhancement Activities

See file for original SHPO, BUAR, and THPO coordination dates (other than Mashpee THPO).

### III. OTHER PERMITS/APPROVALS/COORDINATION

- a. WQC: Waived/issued  
b. CZM: Procedural denial  
c. Historic properties/cultural resources:  
Coordination with SHPO: Date: [Click here to enter a date.](#) or ☐ N/A  
Coordination with BUAR Date: [Click here to enter a date.](#) or ☐ N/A  
Coordination with THPO(s):  
Wampanoag – Aquinnah Date: [Click here to enter a date.](#) or ☐ N/A  
Narragansetts Date: [Click here to enter a date.](#) or ☐ N/A  
Stockbridge-Munsees Date: [Click here to enter a date.](#) or ☐ N/A  
Wampanoag -Mashpee Date: 1/7/2016 or ☐ N/A  
or ☐ 15-day exp., date: [Click here to enter a date.](#)  
d. MMS coordination: ☒ Not required; ☐ Complete;  
e. MAS coordination: ☐ Complete or ☒ N/A  
f. Endangered Species: NMFS: NLAA - confirmed by NMFS via verification form FWS: No effect  
g. Essential Fish Habitat Present: ☒ Yes or ☐ N/A  
h. Wild & Scenic River Coord: ☐ Yes or ☒ N/A  
i. FEMA Coordination: ☐ Yes or ☒ N/A  
j. Special conditions to minimize adverse effects: Applicant requested to keep 12 original special conditions, as modified. See original authorization letter and subsequent modification for details.

### IV. OVERALL REVIEW OF APPLICATION

- ☒ Adverse environmental impacts are minimal both individually and cumulatively  
☒ or ☐ N/A PM has verified that the three criteria for wetland delineation have been met  
☒ or ☐ N/A Federal jurisdictional boundaries used (OHW, MHW, HTL) and verified  
☒ Application pertains to a single and complete project  
  
☒ No unresolved Section 408 issues (see GC 7(b))  
☒ EIS not required by Corps

### V. DETERMINATION

Additional notes/ resolution of issues: Aquatic impacts are minimal and do not require mitigation.

Applicant has requested that reissuance letter contain the same 12 special conditions contained in the original authorization letter, as modified, and has requested a waiver of all TOY restrictions within the General Permit (original authorization contained no TOY restriction).

Special condition 12 of the January 7, 2013 modification letter required MassDOT to submit plan sheets depicting the low flow channel. Revised sheets dated January 11, 2013 showing the low flow channel were subsequently submitted to the Corps. These were coordinated with the agencies, with no objections, but were never approved in writing. Therefore the reauthorization letter will need to reference the most

current plans, which will consist of the modification plans with the January 11, 2013 revised sheets incorporated into them.

Date of receipt of complete application as entered in ORM: 1/7/2016

Date agency objections resolved/final decision to issue: [Click here to enter a date.](#)

**Initial for concurrence:**

Project Manager \_\_\_\_\_ Branch Chief \_\_\_\_\_



**US Army Corps  
of Engineers**®  
New England District

**GENERAL PERMITS FOR MASSACHUSETTS  
SECTION 7 PROGRAMMATIC CONSULTATION  
VERIFICATION FORM**

Application Number: NAE-2008-03324

General Permit to be verified:

☐ GP 1    ☐ GP 3    ☐ GP 5    ☐ GP 7    ☐ GP 9    ☒ GP 10    ☒ GP 14    ☐ GP 21

**Corps Determination:**

The Corps has determined that the proposed activities specified above are Not Likely to Adversely Affect (NLAA) listed species and habitat under NMFS jurisdiction in accordance with the November 2015 “Section 7 Programmatic Consultation with NOAA PRD for the General Permits for Massachusetts” (PC), specifically the “NLAA confirmed by NOAA PRD via verification form submittal for review under this PC” bullets in Section 7(a). This determination is based upon compliance with all of the Project Design Criteria (PDCs) in Sections 1 and 2 below, which align with Section 7(a) of the PC, or the justification and/or special conditions in Section 3 below.

**Section 1 – Activity Specific PDCs**

☐ **GP 1**

- ☐ No tide gate work, and
  - ☐ No work at the Holyoke or Turners Falls Dams that causes turbidity or sediment resuspension, and
  - ☐ The activity is in compliance with the General PDCs in Section 2.
- or
- ☐ The justification and/or special conditions in Section 3 demonstrate the NLAA determination.

☐ **GP 3**

- ☐ The activity is in compliance with the General PDCs in Section 2.
- or
- ☐ The justification and/or special conditions in Section 3 demonstrate the NLAA determination.

☐ **GP 5**

- ☐ If dredging and associated disposal occurs, work between Mar 16 and Oct 31 in tidal waters, the Connecticut River from the MA/CT border to the Turners Falls Dam, Merrimack River to the Essex Dam, or Taunton River uses mechanical dredging, the Currituck or Murden hopper dredges, or hydraulic/cutterhead using <24 inch diameter pipes; and
  - ☐ The activity is in compliance with the General PDCs in Section 2.
- or
- ☐ The justification and/or special conditions in Section 3 demonstrate the NLAA determination.

☐ **GP 7**

- ☐ The activity is ≤500 feet in total length including both stream banks; and
  - ☐ The activity is in compliance with the General PDCs in Section 2.
- or
- ☐ The justification and/or special conditions in Section 3 demonstrate the NLAA determination.

☐ **GP 9**

- ☐ The activity is in compliance with the General PDCs in Section 2.
- or
- ☐ The justification and/or special conditions in Section 3 demonstrate the NLAA determination.

☐ **GP 10**

- ☐ The activity is in compliance with the General PDCs in Section 2.  
or  
☒ The justification and/or special conditions in Section 3 demonstrate the NLAA determination.

☐ **GP 14**

- ☐ The activity is in compliance with the General PDCs in Section 2.  
or  
☒ The justification and/or special conditions in Section 3 demonstrate the NLAA determination.

☐ **GP 21**

Aquaculture that meets the following:

- ☐ Shell on bottom <10 acres with maximum of 4 corner marker buoys; and  
☐ Cage on bottom with no loose floating lines <5 acres and minimal vertical lines (1 per string of cages); and  
☐ Floating cages in <3 acres in waters <10 feet MLLW with no loose lines and minimal vertical lines (1 per string of cages); and  
☐ The activity is in compliance with the General PDCs in Section 2.  
or  
☐ The justification and/or special conditions in Section 3 demonstrate the NLAA determination.

**Section 2 - General PDCs**

- ☐ In addition to the PDCs above, the activity is in compliance with the following PDCs or these PDCs do not apply:
1. Relevant general conditions are met (Note: Activities authorized under GP 14 are only eligible for this form if they don't comply with relevant general conditions. Therefore provide justification and/or special conditions below.)
  2. There is no work in Atlantic sturgeon spawning areas in the CT River all year.
  3. There is no work in Atlantic sturgeon rearing areas in the CT River from April 15 to July 15.
  4. There is no work in shortnose sturgeon spawning areas in the CT and Merrimack Rivers all year.
  5. There is no work in shortnose sturgeon overwintering areas in the CT and Merrimack Rivers from Nov. 1 to March 15.
  6. There is no work in shortnose sturgeon rearing areas in the CT and Merrimack Rivers from April 15 to July 15.
  7. The project involves the installation of piles  $\leq 24$ -inches in diameter. (See GC 12.)
  8. The project does not involve steel piles. (See GC 12.)
  9. Work that occurs in habitat for listed species under the jurisdiction of NOAA PRD does not require a waiver from the Corps in accordance with GC 17(f). The TOY restriction for the purposes of listed species is Nov 1 to Mar 15.

OR

**Section 3**

- ☒ The activity is not in compliance with all of the PDCs in Sections 1 and 2 above, but the justification and/or special conditions provided below or via separate attachment demonstrate why the project still meets the NLAA determination: \_\_\_\_\_  
Project is not a new proposal, but rather reauthorization of a previously authorized project. Work has been underway since 2013 and is 75% complete. NMFS indicated there were no ESA concerns for the project when it was originally reviewed in 2008. Water depths through the existing culvert are extremely shallow (essentially dry through culvert at MLW).

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**NMFS Determination (Corps PM: do not assume NMFS concurrence if no response):**

- ☐ NMFS concurs with the Corps determination that the proposed project is consistent with the GP, as checked above, and the Section 7 PC.
- ☐ NMFS concurs with the Corps determination that proposed project is consistent with the GP, as checked above, and/or the Section 7 PC per the justification and/or special conditions provided above.
- ☐ NMFS does not concur with the Corps determination that the project is consistent with the GP, as checked above, and/or with the Section 7 PC and recommends a separate Section 7 consultation.

\_\_\_\_\_ NMFS signature

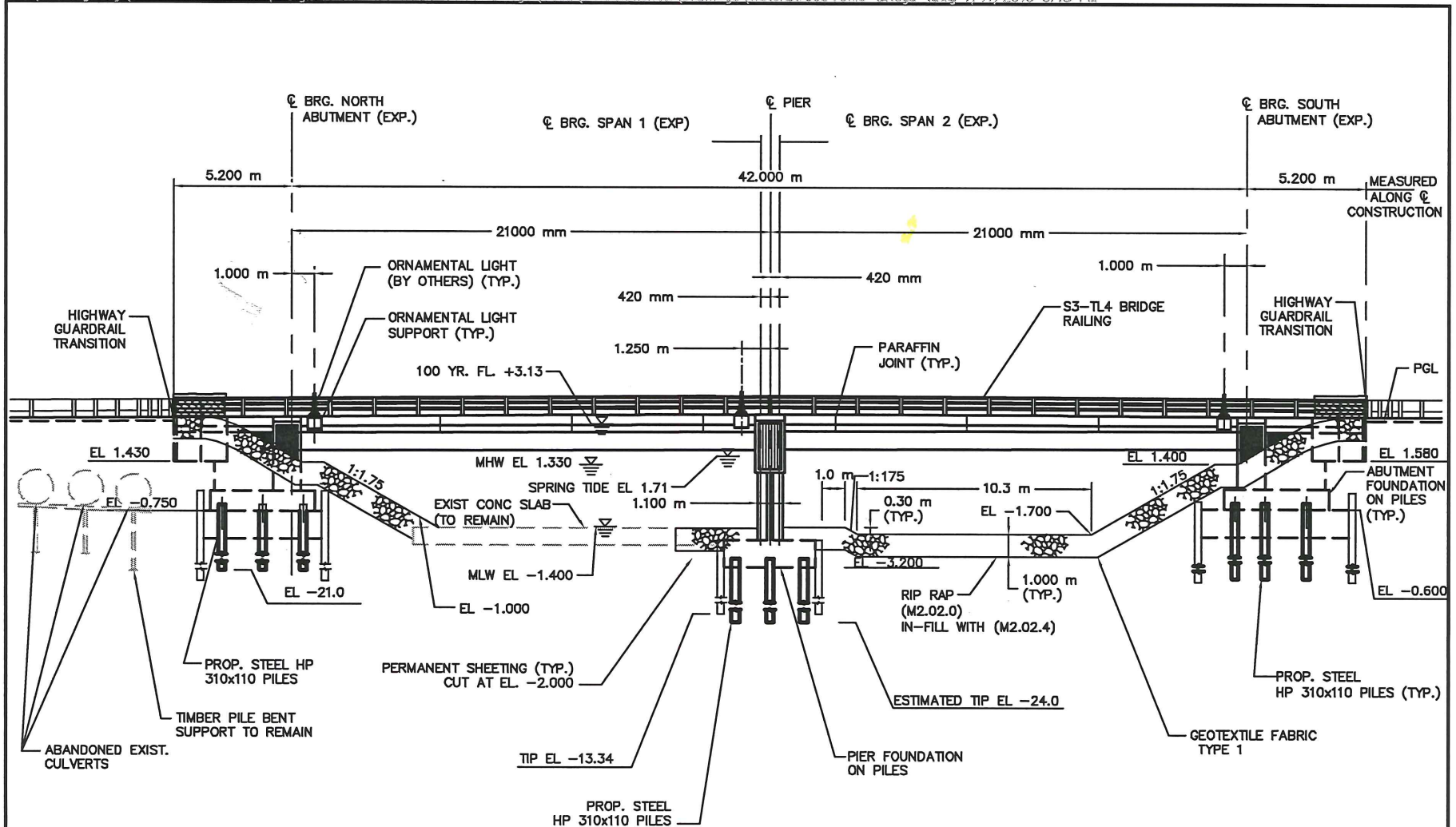
\_\_\_\_\_ Date

EMAIL THIS FORM TO: [kevin.madley@noaa.gov](mailto:kevin.madley@noaa.gov).

**Low Flow Channel Plan Sheets**

**dated**

**January 11, 2013**



DATUM = NGVD 29 (METERS)

PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

# WATER STREET PROFILE AT BRIDGE

HORIZ. SCALE IN METERS



RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 1/11/2013 SHEET 6 OF 19

### CONSTRUCTION SEQUENCE – STAGE 1A:

1. PLACE ANY REQUIRED ENVIRONMENTAL CONTROLS.
2. FIELD LOCATE ALL UTILITIES AND EXISTING STRUCTURES WHICH MAY INTERFERE WITH THE PROPOSED CONSTRUCTION AND RELOCATE AS REQUIRED.
3. REMOVE EXISTING SHEETING SECTIONS AS SHOWN ON CONSTRUCTION SEQUENCING DRAWINGS.

### CONSTRUCTION SEQUENCE – STAGE 1B:

4. INSTALL STAGE 1 SEDIMENT CONTROL WALL PILES ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
5. INSTALL PILES FOR STAGE 1 SEDIMENTATION CONTROL WALL ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
6. INSTALL STEEL PLATES FOR STAGE 1 SEDIMENT CONTROL WALL ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
7. INSTALL TURBIDITY CONTROL CURTAIN ON WEST SIDE. INSTALL STAGE 1 PERIMETER SHEET PILING AT THE LOCATIONS AND ELEVATIONS SHOWN. INSTALL REQUIRED RIPRAP THE SAME DAY AS SHEET PILE INSTALLATION. WHERE EXISTING RIPRAP IS ENCOUNTERED PRE-EXCAVATION WILL BE REQUIRED FOR SHEET PILE INSTALLATION. REMOVE TURBIDITY CONTROL CURTAIN.
8. CONNECT STAGE 1 SEDIMENT CONTROL WALL TO STAGE 1 PERIMETER SHEET PILING AND EXISTING ABUTMENT WALLS AS SHOWN.
9. INSTALL THE SHEETING FOR THE DEADMAN SUPPORT SYSTEM.
10. LOCALLY EXCAVATE AS REQUIRED TO REMOVE EXISTING WING WALL FOUNDATIONS AND TIMBER PILES AT THE WEST SIDE OF THE EXISTING NORTH ABUTMENT FOR INSTALLATION OF SHEET PILE COFFERDAM WALL.
11. LOCALLY EXCAVATE TO ELEVATION +1.7m IN AREA SHOWN. CONTRACTOR TO VERIFY EXISTING SHEET PILE WALL BEHIND EXISTING SOUTH ABUTMENT IS ADEQUATE TO SUPPORT CONTRACTOR'S CONSTRUCTION EQUIPMENT. CONTRACTOR HAS THE OPTION TO INSTALL SUPPLEMENTAL DEADMAN SUPPORT SYSTEM (DESIGN BY CONTRACTOR).
12. REMOVE SECTION OF EXISTING SOUTH ABUTMENT WALL AND UNDERLYING SLAB SECTION UP TO THE SOLDIER PILE WALL IN THE WET IN STAGE 1 AREA AS SHOWN. SURVEY LOCATION OF EXISTING TIMBER PILES.
13. LOCALLY EXCAVATE AS REQUIRED TO REMOVE EXISTING WINGWALL FOUNDATION AND FOUNDATION PILES ON WEST SIDE OF EXISTING NORTH AND SOUTH ABUTMENT.

### CONSTRUCTION SEQUENCE – STAGE 1C:

14. INSTALL FIRST SEGMENT OF PIER COFFERDAM. IF NORTH WALL OF THE NEW PIER COFFERDAM CANNOT BE INSTALLED AS SHOWN DUE TO CONFLICT WITH TIMBER PILES, MOVE COFFERDAM WALL TO NORTH SIDE OF THE EXISTING FOUNDATION TIMBER PILES. POSITION SHEET PILES OF THE EAST WALL OF THE CENTER PIER COFFERDAM SO THAT PIER FOUNDATION PILES CAN BE DRIVEN IN BELLIES OF SHEETING. REMOVE ONLY EXISTING SHEET PILES THAT INTERFERE WITH INSTALLATION OF COFFERDAM.
15. INSTALL STAGE 1 SHEET PILING AT THE LOCATIONS AND ELEVATIONS SHOWN FOR THE NORTH ABUTMENT AND SOUTH ABUTMENT COFFERDAMS.
16. LOCALLY PRE-EXCAVATE TO ELEVATION +1.7m IN AREA SHOWN NORTH OF STAGE 1 NORTH ABUTMENT COFFERDAM.
17. EXCAVATE WITHIN THE NORTH ABUTMENT, PIER, AND SOUTH ABUTMENT COFFERDAMS TO NO MORE THAN 600 mm BELOW THE BRACING ELEVATIONS. REMOVE EXISTING SHEETING WITHIN PIER COFFERDAM.
18. INSTALL BRACING SYSTEM AT THE LOCATIONS AND ELEVATIONS SHOWN FOR THE NORTH ABUTMENT, PIER AND SOUTH ABUTMENT COFFERDAMS.
19. EXCAVATE TO THE BOTTOM OF TREMIE ELEVATION AT THE NORTH AND SOUTH ABUTMENT COFFERDAMS IN THE WET MAINTAINING EQUAL WATER LEVEL ON INSIDE AND OUTSIDE OF COFFERDAM. DO NOT EXCEED THE MAXIMUM EXCAVATION DEPTHS SHOWN ON THE PLANS.
20. EXCAVATE TO 400 mm BELOW THE BOTTOM OF PIER ELEVATION AT THE PIER COFFERDAM. CENTER PIER EXCAVATION MAY BE PERFORMED IN THE DRY. DO NOT EXCEED THE MAXIMUM EXCAVATION DEPTHS SHOWN. REMOVE EXISTING SHEET PILES WITHIN STAGE 1 CENTER PIER COFFERDAM.
21. INSTALL STAGE 1 FOUNDATION PILES AS REQUIRED WITHIN THE NEW NORTH ABUTMENT, PIER, AND SOUTH ABUTMENT COFFERDAMS.
22. PLACE TREMIE SEAL TIGHT TO SHEETING AT STAGE 1 NORTH AND SOUTH ABUTMENT COFFERDAMS. AFTER TREMIE SEAL ACHIEVES A COMPRESSIVE STRENGTH OF 21 MPa, REMOVE BRACING AT NORTH AND SOUTH ABUTMENT COFFERDAMS AS REQUIRED AND DEWATER COFFERDAMS.
23. PLACE 400 mm THICKNESS OF CRUSHED STONE AT BASE OF CENTER PIER COFFERDAM EXCAVATION. CONSTRUCT FOUNDATION WITHIN CENTER PIER COFFERDAM, PLACE STRUCTURAL BACKFILL AND 300mm THICK UNREINFORCED SLAB TIGHT TO TO SHEETING AS SHOWN. AFTER FOUNDATION AND 300mm THICK UNREINFORCED SLAB WITHIN CENTER PIER COFFERDAM REACHES A COMPRESSIVE STRENGTH OF 21 MPa, REMOVE BRACING AT CENTER PIER COFFERDAM.

24. CONSTRUCT STAGE 1 ABUTMENTS AND CENTER PIER WITHIN ABUTMENT AND PIER COFFERDAMS.
25. EXCAVATE AREA BETWEEN NORTH ABUTMENT COFFERDAM SHEETING AND EXISTING SHEETING SECTION NORTH OF EXISTING NORTH ABUTMENT TO ELEVATION +0.2 METERS. REMOVE SECTION OF EXISTING SHEETING AS SHOWN.
26. REMOVE SECTION OF EXISTING NORTH ABUTMENT WALL AS SHOWN WITHIN STAGE 1 AREA TO THE TOP OF EXISTING SLAB IN THE WET.
27. LOCALLY EXCAVATE IN STAGE 1 AREA TO INSTALL NEW BRIDGE BEAMS AS REQUIRED TO RELOCATE EXISTING UTILITIES AS SHOWN.
28. CUT CENTER PIER AND ABUTMENT COFFERDAM SHEETING AS REQUIRED (NO LOWER THAN ELEVATION 1.7 METERS) TO INSTALL BRIDGE BEAMS FOR UTILITY RELOCATION.

### CONSTRUCTION SEQUENCE – STAGE 1D:

29. INSTALL BRIDGE BEAMS No. 9, No. 10, No. 19 AND No. 20.
30. RELOCATE EXISTING GAS AND SEWER UTILITIES TO THEIR PROPOSED FINAL LOCATION ON BRIDGE.

### CONSTRUCTION SEQUENCE – STAGE 1E:

31. EXTEND STAGE 1 SEDIMENT CONTROL WALL TO ALLOW FOR REMOVAL OF REMAINING EXISTING ABUTMENTS AND SLABS WITHIN STAGE 1.
32. REMOVE REMAINING PORTION OF EXISTING SOUTH ABUTMENT WALL AS SHOWN. REMOVE EXISTING SLAB AS REQUIRED TO INSTALL NEW SHEET PILING.
33. INSTALL CLOSURE WALL BETWEEN STAGE 1 AND STAGE 2 CONSTRUCTION LIMITS.
34. REMOVE EXISTING SHEETING ADJACENT TO CENTERLINE OF CONSTRUCTION BASELINE AS SHOWN ON CONSTRUCTION SEQUENCING DRAWINGS.
35. LOCALLY EXCAVATE IN THE WET WITHIN STAGE 1 AREA BETWEEN THE CENTER PIER AND SOUTH ABUTMENT COFFERDAMS TO NO MORE THAN 600 mm BELOW THE DEADMAN SUPPORT SYSTEM BRACING ELEVATIONS SHOWN.
36. INSTALL THE DEADMAN SUPPORT SYSTEM BRACING AT THE LOCATIONS AND ELEVATIONS SHOWN.

PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

### CONSTRUCTION SEQUENCE NOTES 1 OF 3

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 1/11/2013 SHEET 7 OF 19

### CONSTRUCTION SEQUENCE – STAGE 1F:

37. INSTALL STAGE 1 SHEET PILING AT THE LOCATIONS AND ELEVATIONS SHOWN FOR THE REMAINDER OF THE NORTH ABUTMENT AND SOUTH ABUTMENT COFFERDAMS.
38. INSTALL REMAINDER OF NEW STAGE 1 CENTER PIER COFFERDAM. IF NORTH WALL OF THE NEW CENTER PIER COFFERDAM CANNOT BE INSTALLED AS SHOWN DUE TO CONFLICT WITH TIMBER PILES, MOVE COFFERDAM WALL TO NORTH SIDE OF THE EXISTING FOUNDATION TIMBER PILES.
39. EXCAVATE WITHIN THE NORTH ABUTMENT, CENTER PIER, AND SOUTH ABUTMENT COFFERDAMS TO NO MORE THAN 600 mm BELOW THE BRACING ELEVATIONS. REMOVE EXISTING SHEETING WITHIN CENTER PIER COFFERDAM.
40. INSTALL BRACING SYSTEM AT THE LOCATIONS AND ELEVATIONS SHOWN FOR THE NORTH ABUTMENT, CENTER PIER AND SOUTH ABUTMENT COFFERDAMS.
41. EXCAVATE TO THE BOTTOM OF TREMIE ELEVATION AT THE STAGE 1 NORTH AND SOUTH ABUTMENT COFFERDAMS IN THE WET MAINTAINING EQUAL WATER LEVEL ON INSIDE AND OUTSIDE OF COFFERDAM. DO NOT EXCEED THE MAXIMUM EXCAVATION DEPTHS SHOWN ON THE PLANS.
42. EXCAVATE TO 400 mm BELOW THE BOTTOM OF PIER ELEVATION AT THE CENTER PIER STAGE 1 COFFERDAM. CENTER PIER EXCAVATION MAY BE PERFORMED IN THE DRY. DO NOT EXCEED THE MAXIMUM EXCAVATION DEPTHS SHOWN. REMOVE EXISTING SHEET PILES WITHIN STAGE 1 CENTER PIER COFFERDAM. REMOVE STAGE 1 CENTER PIER CLOSURE WALL SHEET PILES IF NECESSARY TO INSTALL CENTER PIER FOUNDATION PILES, OTHERWISE CUT STAGE 1 CENTER PIER CLOSURE WALL AT BOTTOM OF PIER ELEVATION.
43. LOCALLY REMOVE SECTIONS OF EXISTING WINGWALL FOUNDATIONS WITHIN NORTH ABUTMENT AND CENTER PIER COFFERDAMS AS REQUIRED TO ALLOW INSTALLATION OF REMAINING STAGE 1 FOUNDATION PILES.
44. INSTALL REMAINING STAGE 1 FOUNDATION PILES AS REQUIRED FOR THE NEW NORTH ABUTMENT, CENTER PIER, AND SOUTH ABUTMENT.
45. PLACE TREMIE SEAL TIGHT TO SHEETING AT STAGE 1 NORTH AND SOUTH ABUTMENT COFFERDAMS. AFTER TREMIE SEAL ACHIEVES A COMPRESSIVE STRENGTH OF 21 MPa, REMOVE BRACING AT NORTH AND SOUTH ABUTMENT COFFERDAMS AS REQUIRED AND DEWATER COFFERDAMS.
46. PLACE 400 mm THICKNESS OF CRUSHED STONE AT BASE OF CENTER PIER COFFERDAM EXCAVATION. CONSTRUCT CENTER PIER FOUNDATION, PLACE STRUCTURAL BACKFILL AND 300mm THICK UNREINFORCED SLAB TIGHT TO SHEETING AS SHOWN. AFTER FOUNDATION AND 300mm THICK UNREINFORCED SLAB WITHIN CENTER PIER COFFERDAM REACHES A COMPRESSIVE STRENGTH OF 21

Mpa, REMOVE BRACING AT CENTER PIER COFFERDAM.

47. CUT STAGE 1 NORTH AND SOUTH ABUTMENT CLOSURE WALLS AT TOP OF TREMIE ELEVATION. CONSTRUCT REMAINDER OF STAGE 1 ABUTMENTS FOUNDATIONS, AND ABUTMENTS AND CENTER PIER.
48. REMOVE REMAINING SECTIONS OF EXISTING NORTH ABUTMENT WALLS WITHIN STAGE 1 AREA TO THE TOP OF EXISTING SLAB IN THE WET.

### CONSTRUCTION SEQUENCE – STAGE 1G:

49. EXCAVATE THE REMAINDER OF THE STAGE 1 AREA BETWEEN THE CENTER PIER AND SOUTH ABUTMENT COFFERDAMS IN THE WET AS REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND PROJECT REQUIREMENTS.
50. REMOVE STEEL PLATES FOR STAGE 1 SEDIMENT CONTROL WALL ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
51. CUT PILES FOR STAGE 1 SEDIMENT CONTROL WALL TO TOP OF EXISTING SLAB ELEVATION ALONG SOUTH SIDE OF NORTH ABUTMENT.
52. PLACE STRUCTURAL FILL BEHIND NORTH AND SOUTH ABUTMENT WALLS WITHIN ANNULUS BETWEEN WALL AND SHEET PILE TO ELEVATION +1.7 METERS.
53. CUT NORTH SIDE OF NORTH ABUTMENT COFFERDAM SHEET PILES AND SOUTH SIDE OF SOUTH ABUTMENT COFFERDAM SHEET PILES TO ELEVATION +1.7 METERS.
54. PLACE REMAINING RIP RAP IN THE STAGE 1 AREA AS REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND PROJECT REQUIREMENTS.
55. CONSTRUCT THE REMAINDER OF THE STAGE 1 BRIDGE SUPERSTRUCTURE AS REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND PROJECT REQUIREMENTS.

60. INSTALL PILES FOR STAGE 2 SEDIMENTATION CONTROL WALL ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
61. INSTALL STEEL PLATES FOR STAGE 2 SEDIMENT CONTROL WALL ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
62. INSTALL TURBIDITY CONTROL CURTAIN ON EAST SIDE. INSTALL STAGE 2 PERIMETER SHEET PILING AT THE LOCATIONS AND ELEVATIONS SHOWN. INSTALL REQUIRED RIPRAP THE SAME DAY AS SHEET PILE INSTALLATION. WHERE EXISTING RIPRAP IS ENCOUNTERED PRE-EXCAVATION WILL BE REQUIRED FOR SHEET PILE INSTALLATION. REMOVE TURBIDITY CONTROL CURTAIN WHEN INSTALLATION OF RIPRAP HAS BEEN COMPLETED.
63. CONNECT STAGE 2 SEDIMENT CONTROL WALL TO STAGE 2 PERIMETER SHEETING AND NORTH ABUTMENT AND CENTER PIER COFFERDAMS AS SHOWN.
64. LOCALLY EXCAVATE AS REQUIRED TO REMOVE EXISTING WING WALL FOUNDATIONS AND TIMBER PILES AT THE EAST SIDE OF THE EXISTING NORTH AND SOUTH ABUTMENTS. INSTALL SHEETING AS REQUIRED TO MAINTAIN STABILITY OF DEADMAN ANCHOR (TO BE DESIGNED BY CONTRACTOR).

### CONSTRUCTION SEQUENCE – STAGE 2A:

56. PLACE ANY REQUIRED ENVIRONMENTAL CONTROLS.
57. FIELD LOCATE ALL UTILITIES AND EXISTING STRUCTURES WHICH MAY INTERFERE WITH THE PROPOSED CONSTRUCTION AND RELOCATE AS REQUIRED.
58. REMOVE REMAINDER OF EXISTING BRIDGE DECK SLAB.
59. DRILL HOLES THROUGH EXISTING SLAB FOR INSTALLATION OF STAGE 2 SEDIMENT CONTROL WALL PILES ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.

PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

### CONSTRUCTION SEQUENCE NOTES 2 OF 3

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 1/11/2013 SHEET 8 OF 19

## CONSTRUCTION SEQUENCE – STAGE 2B:

65. INSTALL STAGE 2 SHEET PILING AT THE LOCATIONS AND ELEVATIONS SHOWN ON THESE DRAWINGS FOR THE NORTH ABUTMENT, CENTER PIER, AND SOUTH ABUTMENT COFFERDAMS.
66. LOCALLY PRE-EXCAVATE TO ELEVATION +1.7m IN AREAS SHOWN.
67. EXCAVATE WITHIN THE STAGE 2 NORTH ABUTMENT, CENTER PIER, AND SOUTH ABUTMENT COFFERDAMS TO NO MORE THAN 600 mm BELOW THE BRACING ELEVATIONS.
68. INSTALL BRACING SYSTEM AT THE LOCATIONS AND ELEVATIONS SHOWN FOR THE STAGE 2 NORTH ABUTMENT, CENTER PIER AND SOUTH ABUTMENT COFFERDAMS.
69. EXCAVATE TO THE BOTTOM OF TREMIE ELEVATION AT THE STAGE 2 NORTH AND SOUTH ABUTMENT COFFERDAMS IN THE WET MAINTAINING EQUAL WATER LEVEL ON INSIDE AND OUTSIDE OF COFERDAM. DO NOT EXCEED THE MAXIMUM EXCAVATION DEPTHS SHOWN.
70. EXCAVATE TO 400 mm BELOW THE BOTTOM OF PIER ELEVATION AT THE CENTER PIER STAGE 2 COFFERDAM. CENTER PIER EXCAVATION MAY BE PERFORMED IN THE DRY. DO NOT EXCEED THE MAXIMUM EXCAVATION DEPTHS SHOWN.
71. INSTALL STAGE 2 FOUNDATION PILES FOR THE NEW NORTH ABUTMENT, CENTER PIER, AND SOUTH ABUTMENT.
72. PLACE TREMIE SEAL TIGHT TO SHEETING AT STAGE 2 NORTH AND SOUTH ABUTMENT COFFERDAMS. AFTER TREMIE SEAL ACHIEVES A COMPRESSIVE STRENGTH OF 21 MPa, REMOVE BRACING AS REQUIRED AND DEWATER COFFERDAMS.
73. CUT SHEETING BETWEEN STAGE 1 AND STAGE 2 COFFERDAMS AT THE NORTH AND SOUTH ABUTMENTS TO TOP OF TREMIE SLAB, AND AT CENTER PIER TO BOTTOM OF PIER.
74. PLACE 400 mm THICKNESS OF CRUSHED STONE AT BASE OF CENTER PIER COFFERDAM EXCAVATION. CONSTRUCT STAGE 2 ABUTMENTS AND CENTER PIER.
75. LOCALLY EXCAVATE IN THE WET WITHIN STAGE 2 AREA BETWEEN THE CENTER PIER AND SOUTH ABUTMENT COFFERDAMS. DEADMAN SUPPORT SYSTEM TIE RODS MAY BE REMOVED ONCE THIS STAGE 2 AREA HAS BEEN EXCAVATED TO ELEVATION 0.0 METERS.
76. EXCAVATE THE REMAINDER OF THE STAGE 2 AREA BETWEEN THE CENTER PIER AND SOUTH ABUTMENT COFFERDAMS IN THE WET AS REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND PROJECT REQUIREMENTS. REMOVE SHEETING FOR DEADMAN SUPPORT SYSTEM INCLUDING CLOSURE WALL SEPARATING STAGE 1 AND STAGE 2 AREAS BETWEEN THE CENTER PIER AND SOUTH ABUTMENT.

77. EXCAVATE AREA BETWEEN STAGE 2 NORTH ABUTMENT COFFERDAM SHEETING AND NORTH ABUTMENT WALL TO ELEVATION +0.2 METERS.
78. REMOVE REMAINING SECTIONS OF EXISTING NORTH AND SOUTH ABUTMENT WALLS WITHIN STAGE 2 AREA TO THE TOP OF EXISTING SLAB IN THE WET.
79. REMOVE STEEL PLATES FOR STAGE 2 SEDIMENT CONTROL WALL ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
80. CUT PILES FOR STAGE 2 SEDIMENT CONTROL WALL TO TOP OF EXISTING SLAB ELEVATION ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
81. PLACE STRUCTURAL FILL BEHIND NORTH AND SOUTH ABUTMENT WALLS WITHIN ANNULUS BETWEEN WALL AND SHEET PILE TO ELEVATION +1.7 METERS.
82. CUT NORTH SIDE OF NORTH ABUTMENT COFFERDAM SHEET PILES AND SOUTH SIDE OF SOUTH ABUTMENT COFFERDAM SHEET PILES TO ELEVATION +1.7 METERS.
83. PLACE REMAINING RIP RAP IN THE STAGE 2 AREA AS REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND PROJECT REQUIREMENTS.

82. PLACE REMAINING RIP RAP AS REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND PROJECT REQUIREMENTS.

## CONSTRUCTION SEQUENCE – STAGE 3:

84. REMOVE STAGE 1 AND STAGE 2 PERIMETER SHEETING AFTER ALL RIP RAP IS INSTALLED.
85. INSTALL CHANNEL CLOSURE SHEETING AT THE LOCATIONS AND ELEVATIONS SHOWN ON THESE DRAWINGS ONCE FLOW THROUGH THE CHANNEL BETWEEN THE NEW CENTER PIER AND SOUTH ABUTMENT IS UNOBSTRUCTED IN STAGE 1 AND STAGE 2 AREAS. LOCAL EXCAVATION OF RIP RAP WILL BE REQUIRED PRIOR TO INSTALLATION OF CHANNEL CLOSURE SHEETING.
86. REMOVE REMAINING SECTION OF EXISTING CENTER PIER TO TOP OF SLAB IN THE WET.
87. CONSTRUCT THE REMAINDER OF THE STAGE 2 BRIDGE SUPERSTRUCTURE AS REQUIRED.
88. REMOVE CHANNEL CLOSURE SHEETING.
89. CUT SHEETING FOR CENTER PIER COFFERDAM IN STAGE 1 AND STAGE 2 AREAS AT ELEVATION -2.00 m.
90. CUT SHEETING AT EAST, WEST, AND SOUTH SIDES OF NORTH ABUTMENT COFFERDAM SHEET PILES TO ELEVATION 0.15 m.
91. CUT SHEETING AT EAST, WEST, AND NORTH SIDES OF SOUTH ABUTMENT COFFERDAM SHEET PILES TO ELEVATION 0.15 m.

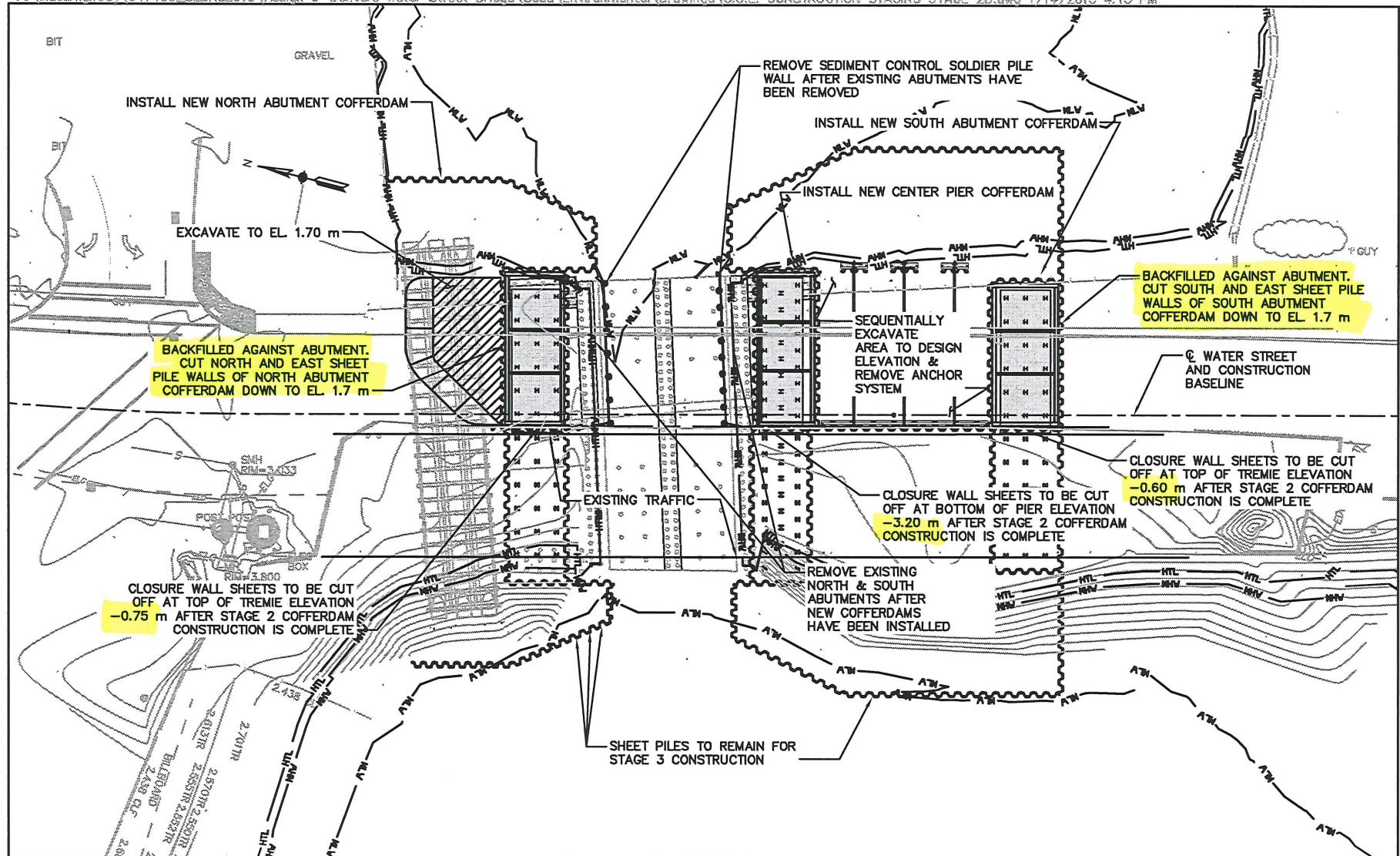
PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

## CONSTRUCTION SEQUENCE NOTES 3 OF 3

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 1/11/2013 SHEET 9 OF 19



PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

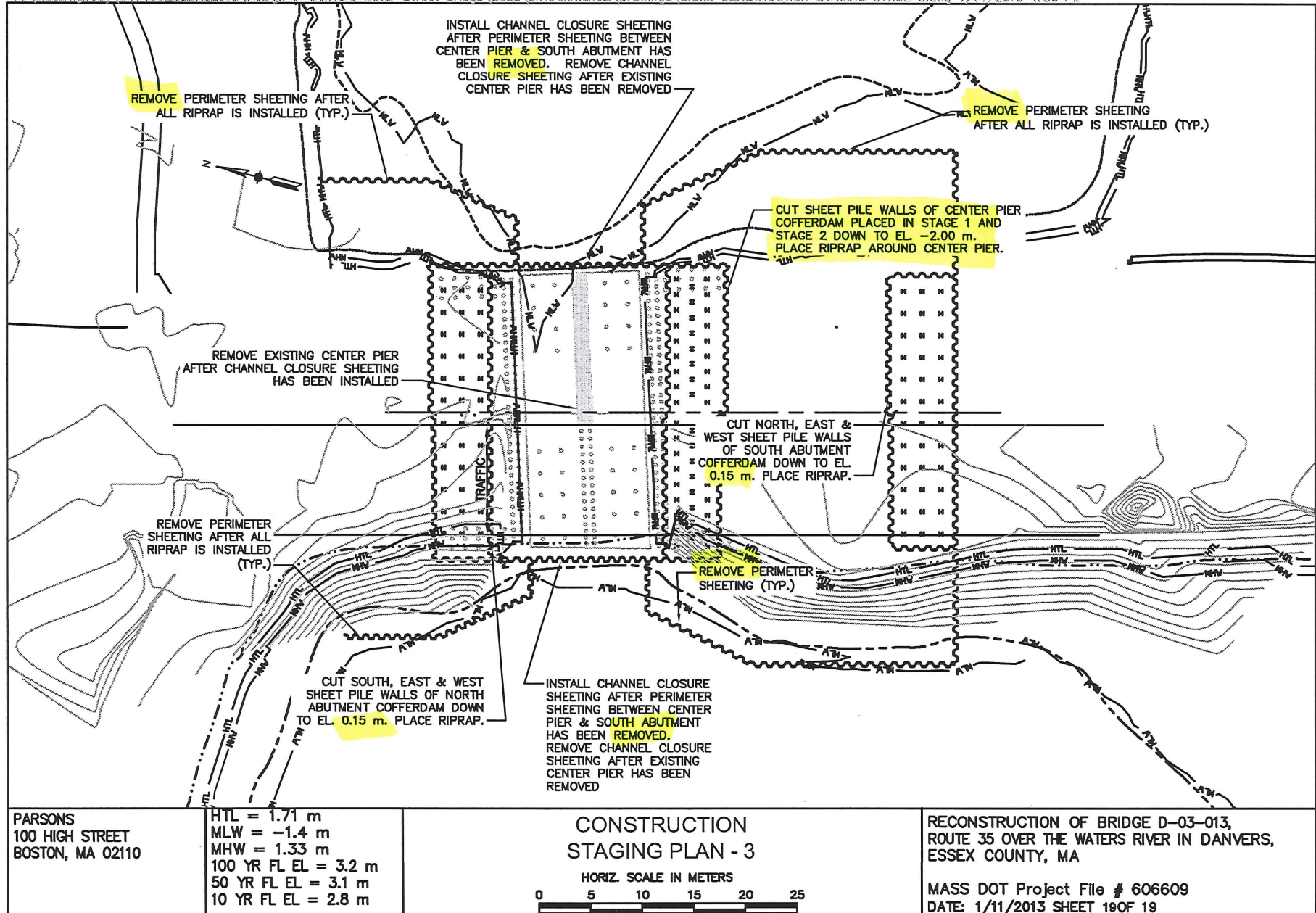
### CONSTRUCTION STAGING - PLAN 2B

HORIZ. SCALE IN METERS



RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 1/11/2013 SHEET 18 OF 19



**Modification Letter**

**dated**

**January 7, 2013**



**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

REPLY TO  
ATTENTION OF

January 7, 2013

Regulatory Division  
Permit Number: **NAE-2008-3324**

Massachusetts Department of Transportation – Highway Division  
Attn: Jessica Kenny, Construction Division  
10 Park Plaza, Room 7360  
Boston, Massachusetts 02116

Dear Ms. Kenny:

This letter concerns your November 19, 2012 request for authorization of a revised construction design for the replacement of the Water Street (Route 35) Bridge (#D-03-013) over the Waters River in Danvers, Massachusetts. On March 9, 2010, the Corps originally confirmed that the Water Street Bridge Replacement Project met the terms and conditions of the Massachusetts General Permit ("MGP"), as conditioned.

We coordinated your recent MGP-modification request with the Federal and State resource agencies for their review and comment. Based upon the resource agencies recommendations, the Corps has decided to modify the work description for the Water Street Bridge Replacement Project as follows as well as to revise and/or include the following special conditions:

"To discharge of dredged and/or fill material into approximately **28,362** square feet of waters of the United States, associated with the Waters River as part of the replacement of the Water Street (Route 35) Bridge (#D-03-013) in Danvers, Massachusetts. This bridge replacement project includes the removal of the existing bridge superstructure and associated abutments, as well as approximately 77 linear feet of the existing causeway; the plugging of the three existing overflow culverts; the construction of a new "wider" two-span bridge; the reworking of existing riprap scour protection; the riprap armoring of additional river bottom areas; and the installation of steel sheet cofferdams to dewater in-river construction areas. This project will result in the restoration of approximately **8,450** square feet of river bottom. Approximately **5,000** cubic yards of sediment will be excavated as part of this project and disposed of at an upland disposal site. The bottom slab of the existing box culvert will be retained. Section 404 impacts associated with this project are limited to the removal of the bridge abutments and portions of the existing causeway; the plugging of the overflow culverts; the construction of the new bridge abutments and central pier; and the installation and rehabilitation of riprap scour protection areas. This work is described on the enclosed plans entitled "RECONSTRUCTION OF BRIDGE D-03-013, ROUTE 35 OVER THE WATERS RIVER IN DANVERS, ESSEX COUNTY, MA," on a total of 17 sheets, and dated "7/30/2012", as well as Sheet 6 of 19 revised "1/04/13" and Sheet 9 of 19 revised "01/07/2013"."

1. All construction shall be completed in accordance with the construction sequence and the limits of construction detailed on the enclosed plan drawings entitled ***“RECONSTRUCTION OF BRIDGE D-03-013, ROUTE 35 OVER THE WATERS RIVER IN DANVERS, ESSEX COUNTY, MA,” on a total of 17 sheets, and dated “7/30/2012”, as well as Sheet 6 of 19 revised “1/04/13” and Sheet 9 of 19 revised “01/07/2013”.*** If you increase the scope of construction within or adjacent to the Waters River, please contact us immediately to discuss modification of this authorization. The Corps must approve any changes before you undertake them.

5. Stone riprap placed for scour protection shall at a minimum conform to the specifications set forth in Standard Specifications for Highways and Bridges, Massachusetts Highway Department, 1988. Section M2.02.2. Heavier stone riprap may be used as needed. [NOTE: This requirement to use larger riprap is not based upon engineering concerns, but rather based upon the Environmental Protection Agency’s concerns that the riprap be vandal-proof.]. ***In addition, MassDOT shall fill in the large voids in the proposed riprap revetment with smaller rock consistent with the Modified Rockfill specifications set forth in Standard Specifications for Highways and Bridges, Massachusetts Highway Department, 1988. Section M2.02.4 (see Enclosure #1).***

7. This MGP authorization allows sections of the steel sheet cofferdam ***associated with the replacement bridge abutments and central pier*** to be cut down and retained after the construction phase of this project is complete. ***These sections of retained steel sheet cofferdam will be armored/buried with riprap as part of the revetment design.*** In all other areas the steel sheet cofferdams shall be removed in their entirety after the construction phase of this project is complete.

***12. MassDOT is required to construct a low-flow channel in order to provide aquatic organism and navigational passage through the project site under low tide conditions. MassDOT provided a preliminary design sketch for the low-flow channel (see Sheet 6 of 19 of the plan drawings). However, they are required to provide the Corps with appropriate construction design drawings for the low-flow channel for our review and approval. The Corps will coordinate the review of these design drawings with the resource agencies. MassDOT shall not begin the construction of the low-flow channel until they have received the Corps approval of the low-flow channel construction design drawings.***

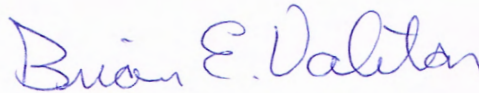
All other conditions of the original permit remain in full force and effect.

Also, this authorization requires that you notify us before beginning the work and that you allow us to inspect the project. Thus, you must complete and return the attached Work Start Notification Form as soon as you know the proposed starting date of this project. At a minimum, the form must arrive at our office no later than two weeks before the work will begin.

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at <http://per2.nwp.usace.army.mil/survey.html>

If you have any questions about this letter, please contact Mr. Paul Sneeringer of my staff at (978) 318-8491 or call toll-free within Massachusetts at (800) 362-4367

Sincerely,



Brian Valiton  
Acting Chief, Permits and Enforcement Branch  
Regulatory Division

Copies Furnished:

Ed Reiner, U.S. EPA, Region 1, Boston, Massachusetts, [reiner.ed@epa.gov](mailto:reiner.ed@epa.gov)

Michael Johnson, National Marine Fisheries Service, Gloucester, Massachusetts,

[Mike.R.Johnson@noaa.gov](mailto:Mike.R.Johnson@noaa.gov)

Ken Chin, Massachusetts Department of Environmental Protection, Boston, Massachusetts

[Transmittal #X241995], [Ken.Chin@state.ma.us](mailto:Ken.Chin@state.ma.us)

Christopher Ross, Massachusetts Department of Environmental Protection, Lakeville,

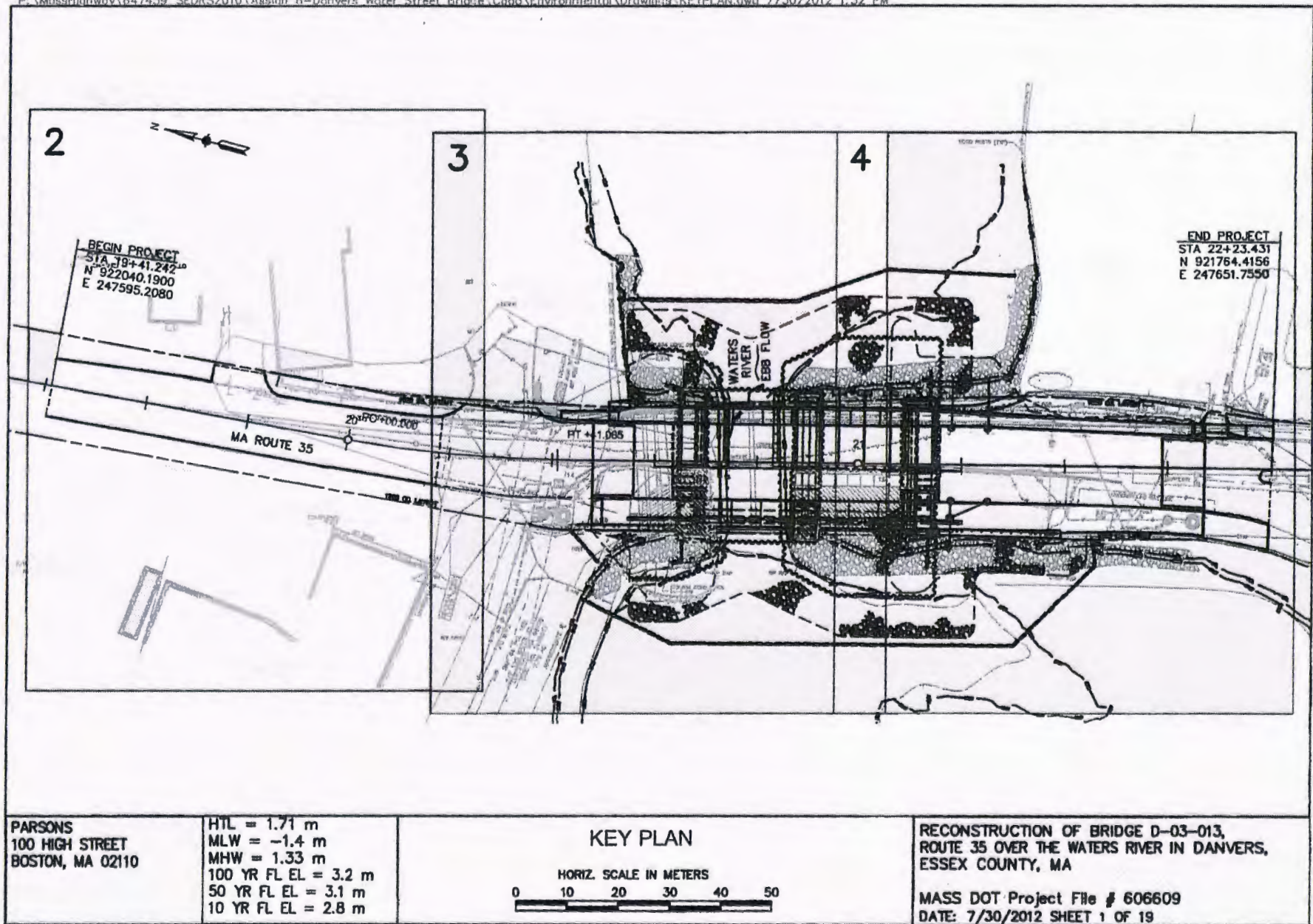
Massachusetts, [christopher.ross@state.ma.us](mailto:christopher.ross@state.ma.us)

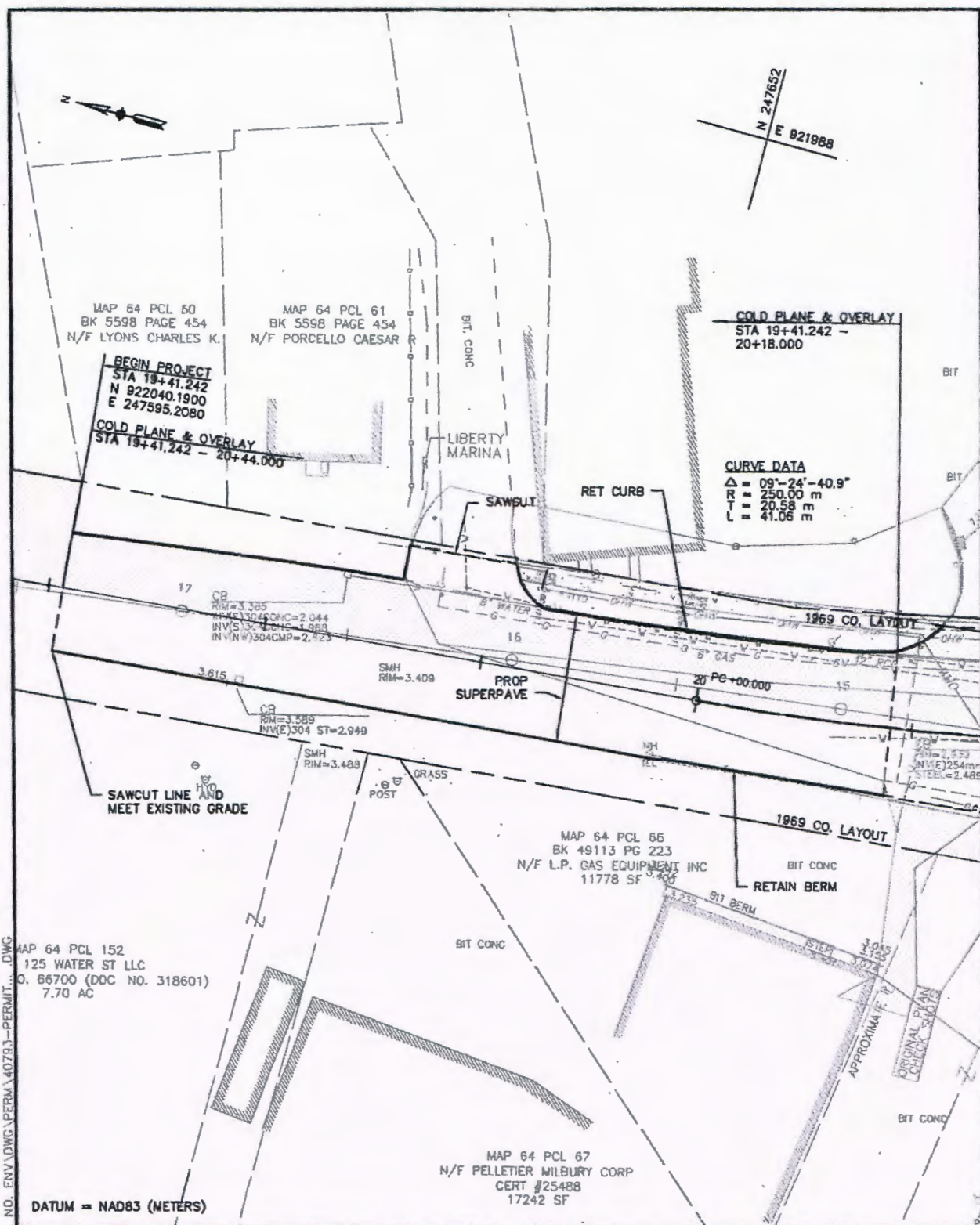
Tay Evans, Massachusetts Division of Marine Fisheries, Gloucester, Massachusetts

[Tay.Evans@state.ma.us](mailto:Tay.Evans@state.ma.us)

Robert Bocri, Coastal Zone Management, Boston, Massachusetts, [Robert.Bocri@state.ma.us](mailto:Robert.Bocri@state.ma.us)

Danvers Conservation Commission, 1 Sylvan Street, Danvers, Massachusetts 01923



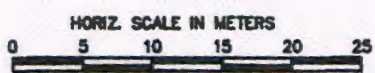


JOB NO. 40793.DWG. NO. ENV\DWG\PERM\40793--PERMIT... DWG

MLW = -1.40 m  
 MHW = 1.33 m  
 HTL = 1.71 m  
 100 YEAR FLOOD AT ELE. 3.2 m

PARSONS 100 HIGH STREET  
 BOSTON, MA 02110

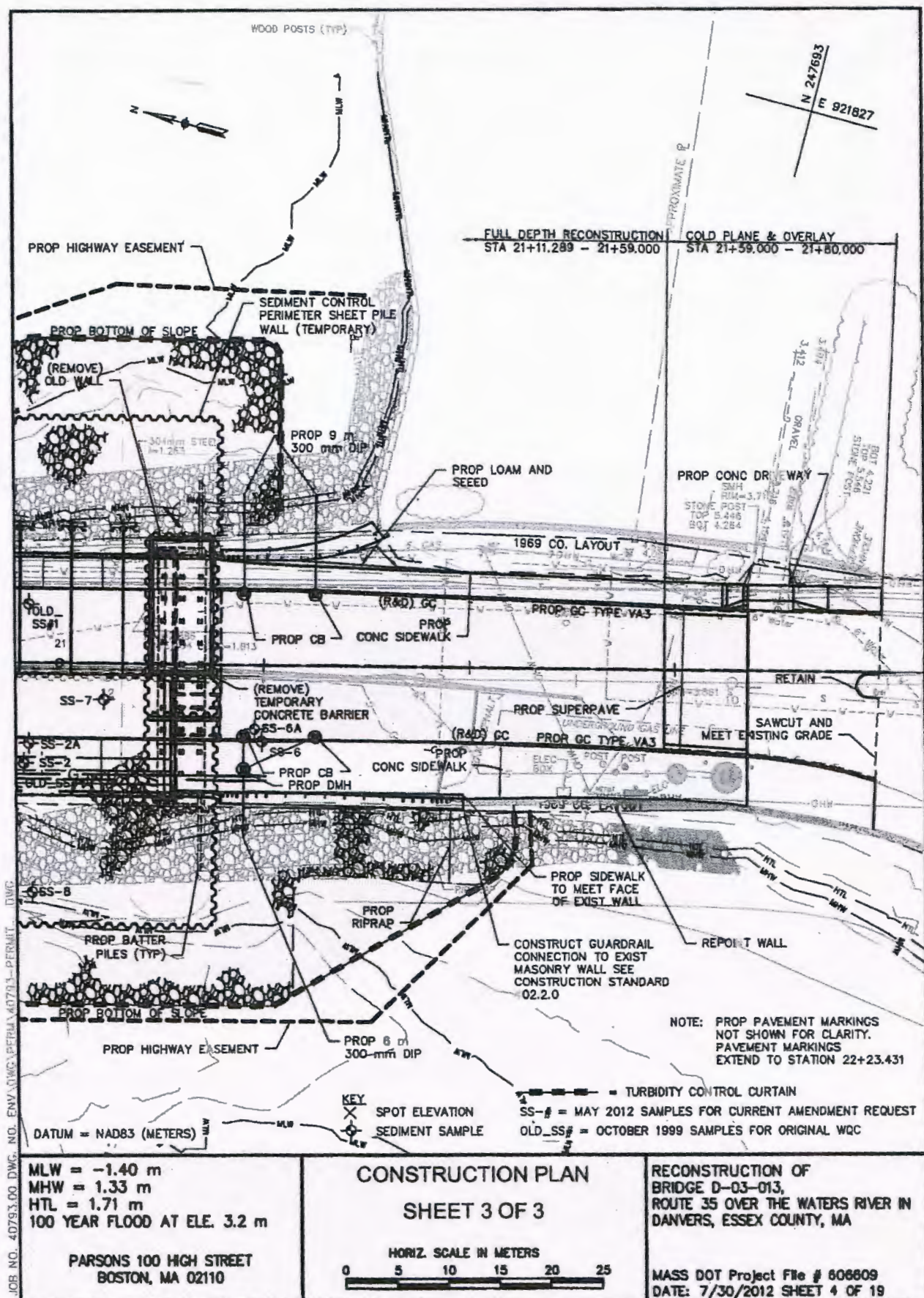
### CONSTRUCTION PLAN

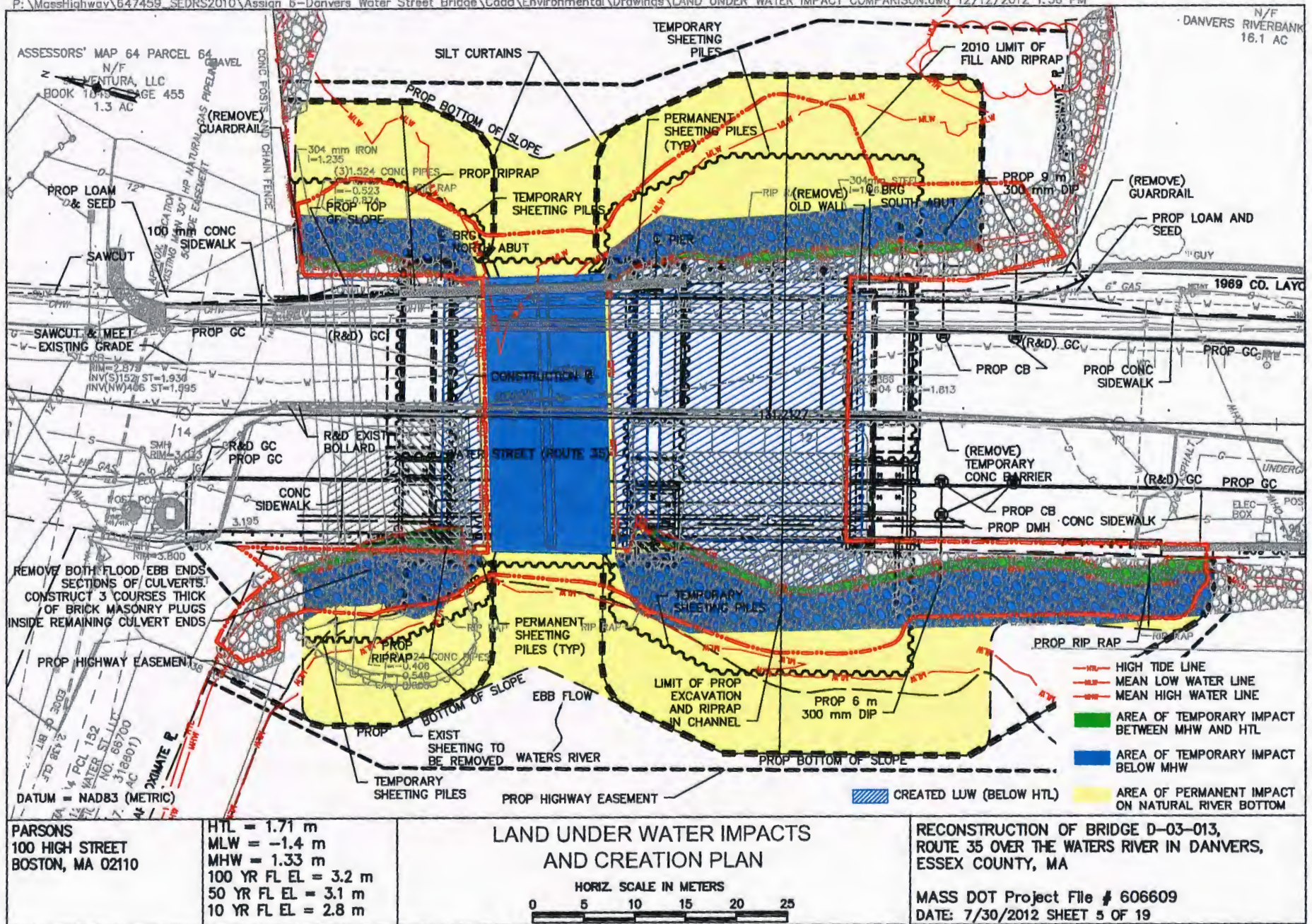


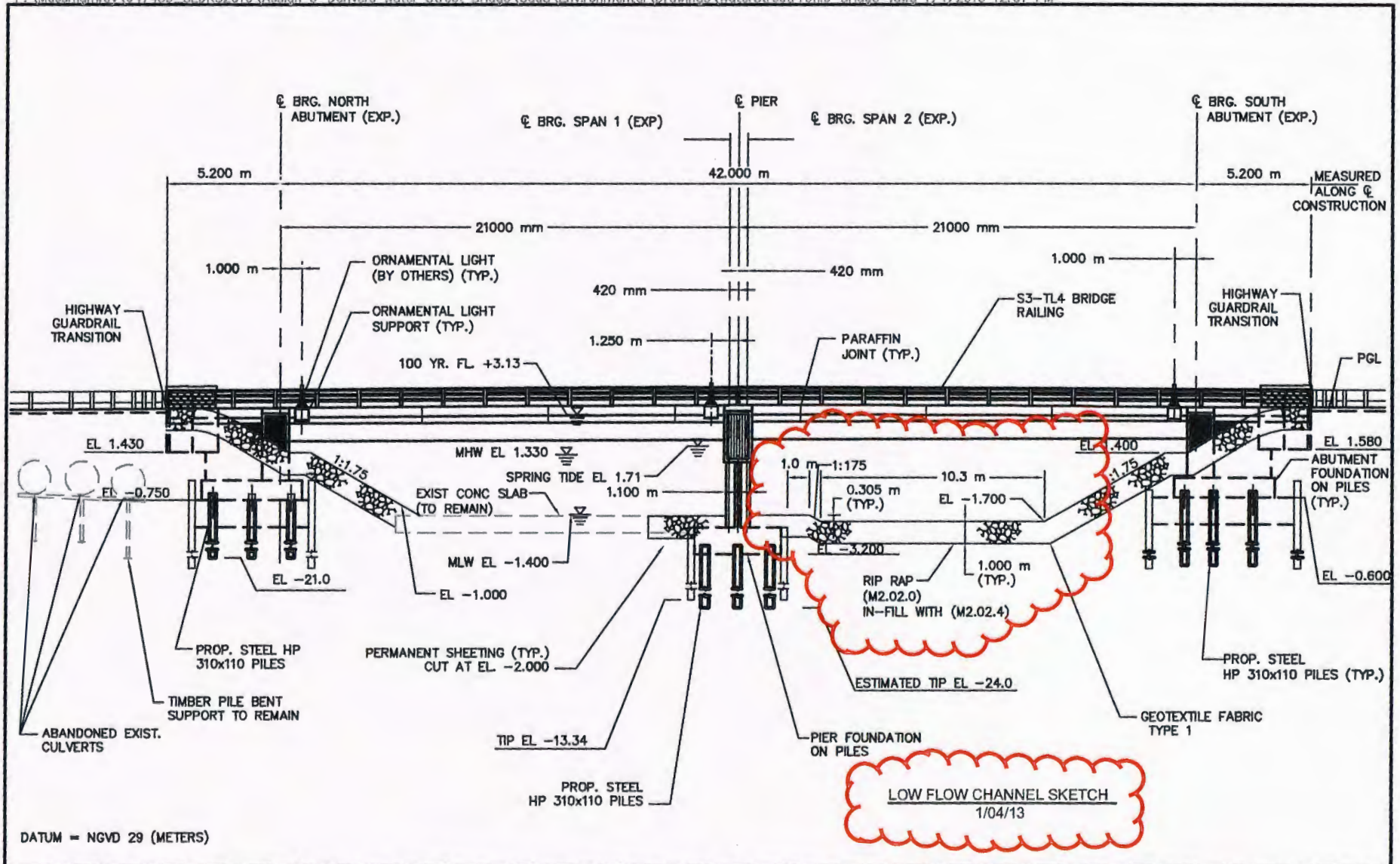
RECONSTRUCTION OF  
 BRIDGE D-03-013,  
 ROUTE 35 OVER THE WATERS RIVER IN  
 DANVERS, ESSEX COUNTY, MA

MASS DOT Project File # 606609  
 DATE: 7/30/2012 SHEET 2 OF 19









<p>PARSONS 100 HIGH STREET BOSTON, MA 02110</p>	<p>HTL = 1.71 m MLW = -1.4 m MHW = 1.33 m 100 YR FL EL = 3.2 m 50 YR FL EL = 3.1 m 10 YR FL EL = 2.8 m</p>	<p><b>WATER STREET PROFILE AT BRIDGE</b></p> <p>HORIZ. SCALE IN METERS</p> <p>0 5 10 25</p>	<p>RECONSTRUCTION OF BRIDGE D-03-013, ROUTE 35 OVER THE WATERS RIVER IN DANVERS, ESSEX COUNTY, MA</p> <p>MASS DOT Project File # 606609 DATE: 7/30/2012 SHEET 6 OF 19</p>
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**DRAFT**

### CONSTRUCTION SEQUENCE - STAGE 1A:

1. PLACE ANY REQUIRED ENVIRONMENTAL CONTROLS.
2. FIELD LOCATE ALL UTILITIES AND EXISTING STRUCTURES WHICH MAY INTERFERE WITH THE PROPOSED CONSTRUCTION AND RELOCATE AS REQUIRED.
3. REMOVE EXISTING SHEETING SECTIONS AS SHOWN ON CONSTRUCTION SEQUENCING DRAWINGS.

### CONSTRUCTION SEQUENCE - STAGE 1B:

4. INSTALL STAGE 1 SEDIMENT CONTROL WALL PILES ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
5. INSTALL PILES FOR STAGE 1 SEDIMENTATION CONTROL WALL ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
6. INSTALL STEEL PLATES FOR STAGE 1 SEDIMENT CONTROL WALL ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
7. INSTALL TURBIDITY CONTROL CURTAIN ON WEST SIDE. INSTALL STAGE 1 PERIMETER SHEET PILING AT THE LOCATIONS AND ELEVATIONS SHOWN. INSTALL REQUIRED RIPRAP THE SAME DAY AS SHEET PILE INSTALLATION. WHERE EXISTING RIPRAP IS ENCOUNTERED PRE-EXCAVATION WILL BE REQUIRED FOR SHEET PILE INSTALLATION. REMOVE TURBIDITY CONTROL CURTAIN.
8. CONNECT STAGE 1 SEDIMENT CONTROL WALL TO STAGE 1 PERIMETER SHEET PILING AND EXISTING ABUTMENT WALLS AS SHOWN.
9. INSTALL THE SHEETING FOR THE DEADMAN SUPPORT SYSTEM.
10. LOCALLY EXCAVATE AS REQUIRED TO REMOVE EXISTING WING WALL FOUNDATIONS AND TIMBER PILES AT THE WEST SIDE OF THE EXISTING NORTH ABUTMENT FOR INSTALLATION OF SHEET PILE COFFERDAM WALL.
11. LOCALLY EXCAVATE TO ELEVATION +1.7m IN AREA SHOWN. CONTRACTOR TO VERIFY EXISTING SHEET PILE WALL BEHIND EXISTING SOUTH ABUTMENT IS ADEQUATE TO SUPPORT CONTRACTOR'S CONSTRUCTION EQUIPMENT. CONTRACTOR HAS THE OPTION TO INSTALL SUPPLEMENTAL DEADMAN SUPPORT SYSTEM (DESIGN BY CONTRACTOR).
12. REMOVE SECTION OF EXISTING SOUTH ABUTMENT WALL AND UNDERLYING SLAB SECTION UP TO THE SOLDIER PILE WALL IN THE WET IN STAGE 1 AREA AS SHOWN. SURVEY LOCATION OF EXISTING TIMBER PILES.
13. LOCALLY EXCAVATE AS REQUIRED TO REMOVE EXISTING

WINGWALL FOUNDATION AND FOUNDATION PILES ON WEST SIDE OF EXISTING NORTH AND SOUTH ABUTMENT.

### CONSTRUCTION SEQUENCE - STAGE 1C:

14. INSTALL FIRST SEGMENT OF PIER COFFERDAM. IF NORTH WALL OF THE NEW PIER COFFERDAM CANNOT BE INSTALLED AS SHOWN DUE TO CONFLICT WITH TIMBER PILES, MOVE COFFERDAM WALL TO NORTH SIDE OF THE EXISTING FOUNDATION TIMBER PILES. POSITION SHEET PILES OF THE EAST WALL OF THE CENTER PIER COFFERDAM SO THAT PIER FOUNDATION PILES CAN BE DRIVEN IN BELLIES OF SHEETING. REMOVE ONLY EXISTING SHEET PILES THAT INTERFERE WITH INSTALLATION OF COFFERDAM.
15. INSTALL STAGE 1 SHEET PILING AT THE LOCATIONS AND ELEVATIONS SHOWN FOR THE NORTH ABUTMENT AND SOUTH ABUTMENT COFFERDAMS.
16. LOCALLY PRE-EXCAVATE TO ELEVATION +1.7m IN AREA SHOWN NORTH OF STAGE 1 NORTH ABUTMENT COFFERDAM.
17. EXCAVATE WITHIN THE NORTH ABUTMENT, PIER, AND SOUTH ABUTMENT COFFERDAMS TO NO MORE THAN 600 mm BELOW THE BRACING ELEVATIONS. REMOVE EXISTING SHEETING WITHIN PIER COFFERDAM.
18. INSTALL BRACING SYSTEM AT THE LOCATIONS AND ELEVATIONS SHOWN FOR THE NORTH ABUTMENT, PIER AND SOUTH ABUTMENT COFFERDAMS.
19. EXCAVATE TO THE BOTTOM OF TREMIE ELEVATION AT THE NORTH AND SOUTH ABUTMENT COFFERDAMS IN THE WET MAINTAINING EQUAL WATER LEVEL ON INSIDE AND OUTSIDE OF COFFERDAM. DO NOT EXCEED THE MAXIMUM EXCAVATION DEPTHS SHOWN ON THE PLANS.
20. EXCAVATE TO 400 mm BELOW THE BOTTOM OF PIER ELEVATION AT THE PIER COFFERDAM. CENTER PIER EXCAVATION MAY BE PERFORMED IN THE DRY. DO NOT EXCEED THE MAXIMUM EXCAVATION DEPTHS SHOWN. REMOVE EXISTING SHEET PILES WITHIN STAGE 1 CENTER PIER COFFERDAM.
21. INSTALL STAGE 1 FOUNDATION PILES AS REQUIRED WITHIN THE NEW NORTH ABUTMENT, PIER, AND SOUTH ABUTMENT COFFERDAMS.
22. PLACE TREMIE SEAL TIGHT TO SHEETING AT STAGE 1 NORTH AND SOUTH ABUTMENT COFFERDAMS. AFTER TREMIE SEAL ACHIEVES A COMPRESSIVE STRENGTH OF 21 MPa, REMOVE BRACING AT NORTH AND SOUTH ABUTMENT COFFERDAMS AS REQUIRED AND DEWATER COFFERDAMS.
23. PLACE 400 mm THICKNESS OF CRUSHED STONE AT BASE OF CENTER PIER COFFERDAM EXCAVATION. CONSTRUCT FOUNDATION WITHIN CENTER PIER COFFERDAM, PLACE STRUCTURAL BACKFILL AND 300mm THICK UNREINFORCED SLAB TIGHT TO SHEETING AS SHOWN. AFTER FOUNDATION AND 300mm THICK UNREINFORCED SLAB

WITHIN CENTER PIER COFFERDAM REACHES A COMPRESSIVE STRENGTH OF 21 MPa, REMOVE BRACING AT CENTER PIER COFFERDAM.

24. CONSTRUCT STAGE 1 ABUTMENTS AND CENTER PIER WITHIN ABUTMENT AND PIER COFFERDAMS.
25. EXCAVATE AREA BETWEEN NORTH ABUTMENT COFFERDAM SHEETING AND EXISTING SHEETING SECTION NORTH OF EXISTING NORTH ABUTMENT TO ELEVATION +0.2 METERS. REMOVE SECTION OF EXISTING SHEETING AS SHOWN.
26. REMOVE SECTION OF EXISTING NORTH ABUTMENT WALL AS SHOWN WITHIN STAGE 1 AREA TO THE TOP OF EXISTING SLAB IN THE WET.
27. LOCALLY EXCAVATE IN STAGE 1 AREA TO INSTALL NEW BRIDGE BEAMS AS REQUIRED TO RELOCATE EXISTING UTILITIES AS SHOWN.
28. CUT CENTER PIER AND ABUTMENT COFFERDAM SHEETING AS REQUIRED (NO LOWER THAN ELEVATION 1.7 METERS) TO INSTALL BRIDGE BEAMS FOR UTILITY RELOCATION.

### CONSTRUCTION SEQUENCE - STAGE 1D:

29. INSTALL BRIDGE BEAMS No. 9, No. 10, No. 19 AND No. 20.
30. RELOCATE EXISTING GAS AND SEWER UTILITIES TO THEIR PROPOSED FINAL LOCATION ON BRIDGE.

### CONSTRUCTION SEQUENCE - STAGE 1E:

31. EXTEND STAGE 1 SEDIMENT CONTROL WALL TO ALLOW FOR REMOVAL OF REMAINING EXISTING ABUTMENTS AND SLABS WITHIN STAGE 1.
32. REMOVE REMAINING PORTION OF EXISTING SOUTH ABUTMENT WALL AS SHOWN. REMOVE EXISTING SLAB AS REQUIRED TO INSTALL NEW SHEET PILING.
33. INSTALL CLOSURE WALL BETWEEN STAGE 1 AND STAGE 2 CONSTRUCTION LIMITS.
34. REMOVE EXISTING SHEETING ADJACENT TO CENTERLINE OF CONSTRUCTION BASELINE AS SHOWN ON CONSTRUCTION SEQUENCING DRAWINGS.
35. LOCALLY EXCAVATE IN THE WET WITHIN STAGE 1 AREA BETWEEN THE CENTER PIER AND SOUTH ABUTMENT COFFERDAMS TO NO MORE THAN 600 mm BELOW THE DEADMAN SUPPORT SYSTEM BRACING ELEVATIONS SHOWN.
36. INSTALL THE DEADMAN SUPPORT SYSTEM BRACING AT THE LOCATIONS AND ELEVATIONS SHOWN.

PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
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### CONSTRUCTION SEQUENCE NOTES 1 OF 3

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 7/30/2012 SHEET 7 OF 19

### CONSTRUCTION SEQUENCE - STAGE 1F:

37. INSTALL STAGE 1 SHEET PILING AT THE LOCATIONS AND ELEVATIONS SHOWN FOR THE REMAINDER OF THE NORTH ABUTMENT AND SOUTH ABUTMENT COFFERDAMS.
38. INSTALL REMAINDER OF NEW STAGE 1 CENTER PIER COFFERDAM. IF NORTH WALL OF THE NEW CENTER PIER COFFERDAM CANNOT BE INSTALLED AS SHOWN DUE TO CONFLICT WITH TIMBER PILES, MOVE COFFERDAM WALL TO NORTH SIDE OF THE EXISTING FOUNDATION TIMBER PILES.
39. EXCAVATE WITHIN THE NORTH ABUTMENT, CENTER PIER, AND SOUTH ABUTMENT COFFERDAMS TO NO MORE THAN 600 mm BELOW THE BRACING ELEVATIONS. REMOVE EXISTING SHEETING WITHIN CENTER PIER COFFERDAM.
40. INSTALL BRACING SYSTEM AT THE LOCATIONS AND ELEVATIONS SHOWN FOR THE NORTH ABUTMENT, CENTER PIER AND SOUTH ABUTMENT COFFERDAMS.
41. EXCAVATE TO THE BOTTOM OF TREMIE ELEVATION AT THE STAGE 1 NORTH AND SOUTH ABUTMENT COFFERDAMS IN THE WET MAINTAINING EQUAL WATER LEVEL ON INSIDE AND OUTSIDE OF COFFERDAM. DO NOT EXCEED THE MAXIMUM EXCAVATION DEPTHS SHOWN ON THE PLANS.
42. EXCAVATE TO 400 mm BELOW THE BOTTOM OF PIER ELEVATION AT THE CENTER PIER STAGE 1 COFFERDAM. CENTER PIER EXCAVATION MAY BE PERFORMED IN THE DRY. DO NOT EXCEED THE MAXIMUM EXCAVATION DEPTHS SHOWN. REMOVE EXISTING SHEET PILES WITHIN STAGE 1 CENTER PIER COFFERDAM. REMOVE STAGE 1 CENTER PIER CLOSURE WALL SHEET PILES IF NECESSARY TO INSTALL CENTER PIER FOUNDATION PILES, OTHERWISE CUT STAGE 1 CENTER PIER CLOSURE WALL AT BOTTOM OF PIER ELEVATION.
43. LOCALLY REMOVE SECTIONS OF EXISTING WINGWALL FOUNDATIONS WITHIN NORTH ABUTMENT AND CENTER PIER COFFERDAMS AS REQUIRED TO ALLOW INSTALLATION OF REMAINING STAGE 1 FOUNDATION PILES.
44. INSTALL REMAINING STAGE 1 FOUNDATION PILES AS REQUIRED FOR THE NEW NORTH ABUTMENT, CENTER PIER, AND SOUTH ABUTMENT.
45. PLACE TREMIE SEAL TIGHT TO SHEETING AT STAGE 1 NORTH AND SOUTH ABUTMENT COFFERDAMS. AFTER TREMIE SEAL ACHIEVES A COMPRESSIVE STRENGTH OF 21 MPa, REMOVE BRACING AT NORTH AND SOUTH ABUTMENT COFFERDAMS AS REQUIRED AND DEWATER COFFERDAMS.
46. PLACE 400 mm THICKNESS OF CRUSHED STONE AT BASE OF CENTER PIER COFFERDAM EXCAVATION. CONSTRUCT CENTER PIER FOUNDATION, PLACE STRUCTURAL BACKFILL AND 300mm THICK UNREINFORCED SLAB TIGHT TO SHEETING AS SHOWN. AFTER FOUNDATION AND 300mm THICK UNREINFORCED SLAB WITHIN CENTER PIER COFFERDAM REACHES A COMPRESSIVE STRENGTH OF 21

MPa, REMOVE BRACING AT CENTER PIER COFFERDAM.

47. CUT STAGE 1 NORTH AND SOUTH ABUTMENT CLOSURE WALLS AT TOP OF TREMIE ELEVATION. CONSTRUCT REMAINDER OF STAGE 1 ABUTMENTS FOUNDATIONS, AND ABUTMENTS AND CENTER PIER.
  48. REMOVE REMAINING SECTIONS OF EXISTING NORTH ABUTMENT WALLS WITHIN STAGE 1 AREA TO THE TOP OF EXISTING SLAB IN THE WET.
- ### CONSTRUCTION SEQUENCE - STAGE 1G:
49. EXCAVATE THE REMAINDER OF THE STAGE 1 AREA BETWEEN THE CENTER PIER AND SOUTH ABUTMENT COFFERDAMS IN THE WET.
  50. REMOVE STEEL PLATES FOR STAGE 1 SEDIMENT CONTROL WALL ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
  51. CUT PILES FOR STAGE 1 SEDIMENT CONTROL WALL TO TOP OF EXISTING SLAB ELEVATION ALONG SOUTH SIDE OF NORTH ABUTMENT.
  52. PLACE STRUCTURAL FILL BEHIND NORTH AND SOUTH ABUTMENT WALLS WITHIN ANNULUS BETWEEN WALL AND SHEET PILE TO ELEVATION +1.7 METERS.
  53. CUT NORTH SIDE OF NORTH ABUTMENT COFFERDAM SHEET PILES AND SOUTH SIDE OF SOUTH ABUTMENT COFFERDAM SHEET PILES TO ELEVATION +1.7 METERS.
  54. PLACE REMAINING RIP RAP IN THE STAGE 1 AREA AS REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND PROJECT REQUIREMENTS.
  55. CONSTRUCT THE REMAINDER OF THE STAGE 1 BRIDGE SUPERSTRUCTURE AS REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND PROJECT REQUIREMENTS.

ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.

61. INSTALL STEEL PLATES FOR STAGE 2 SEDIMENT CONTROL WALL ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
62. INSTALL TURBIDITY CONTROL CURTAIN ON EAST SIDE. INSTALL STAGE 2 PERIMETER SHEET PILING AT THE LOCATIONS AND ELEVATIONS SHOWN. INSTALL REQUIRED RIPRAP THE SAME DAY AS SHEET PILE INSTALLATION. WHERE EXISTING RIPRAP IS ENCOUNTERED PRE-EXCAVATION WILL BE REQUIRED FOR SHEET PILE INSTALLATION. REMOVE TURBIDITY CONTROL CURTAIN.
63. CONNECT STAGE 2 SEDIMENT CONTROL WALL TO STAGE 2 PERIMETER SHEETING AND NORTH ABUTMENT AND CENTER PIER COFFERDAMS AS SHOWN.
64. LOCALLY EXCAVATE AS REQUIRED TO REMOVE EXISTING WING WALL FOUNDATIONS AND TIMBER PILES AT THE EAST SIDE OF THE EXISTING NORTH AND SOUTH ABUTMENTS. INSTALL SHEETING AS REQUIRED TO MAINTAIN STABILITY OF DEADMAN ANCHOR (TO BE DESIGNED BY CONTRACTOR).

### CONSTRUCTION SEQUENCE - STAGE 2A:

56. PLACE ANY REQUIRED ENVIRONMENTAL CONTROLS.
57. FIELD LOCATE ALL UTILITIES AND EXISTING STRUCTURES WHICH MAY INTERFERE WITH THE PROPOSED CONSTRUCTION AND RELOCATE AS REQUIRED.
58. REMOVE REMAINDER OF EXISTING BRIDGE DECK SLAB.
59. DRILL HOLES THROUGH EXISTING SLAB FOR INSTALLATION OF STAGE 2 SEDIMENT CONTROL WALL PILES ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
60. INSTALL PILES FOR STAGE 2 SEDIMENTATION CONTROL WALL

PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

### CONSTRUCTION SEQUENCE NOTES 2 OF 3

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 7/30/2012 SHEET 8 OF 19

## CONSTRUCTION SEQUENCE - STAGE 2B:

65. PLACE TREMIE SEAL TIGHT TO SHEETING AT STAGE 2 NORTH AND SOUTH ABUTMENT COFFERDAMS. AFTER TREMIE SEAL ACHIEVES A COMPRESSIVE STRENGTH OF 21 MPa, REMOVE BRACING AS REQUIRED AND DEWATER COFFERDAMS.
66. CUT SHEETING BETWEEN STAGE 1 AND STAGE 2 COFFERDAMS AT THE NORTH AND SOUTH ABUTMENTS TO TOP OF TREMIE SLAB, AND AT CENTER PIER TO BOTTOM OF PIER.
67. PLACE 400 mm THICKNESS OF CRUSHED STONE AT BASE OF CENTER PIER COFFERDAM EXCAVATION. CONSTRUCT STAGE 2 ABUTMENTS AND CENTER PIER.
68. LOCALLY EXCAVATE IN THE WET WITHIN STAGE 2 AREA BETWEEN THE CENTER PIER AND SOUTH ABUTMENT COFFERDAMS. DEADMAN SUPPORT SYSTEM TIE RODS MAY BE REMOVED ONCE THIS STAGE 2 AREA HAS BEEN EXCAVATED TO ELEVATION 0.0 METERS.
69. EXCAVATE THE REMAINDER OF THE STAGE 2 AREA BETWEEN THE CENTER PIER AND SOUTH ABUTMENT COFFERDAMS IN THE WET AS REQUIRED. REMOVE SHEETING FOR DEADMAN SUPPORT SYSTEM INCLUDING CLOSURE WALL SEPARATING STAGE 1 AND STAGE 2 AREAS BETWEEN THE CENTER PIER AND SOUTH ABUTMENT.
70. EXCAVATE AREA BETWEEN STAGE 2 NORTH ABUTMENT COFFERDAM SHEETING AND NORTH ABUTMENT WALL TO ELEVATION +0.2 METERS.
71. REMOVE REMAINING SECTIONS OF EXISTING NORTH AND SOUTH ABUTMENT WALLS WITHIN STAGE 2 AREA TO THE TOP OF EXISTING SLAB IN THE WET.
72. REMOVE STEEL PLATES FOR STAGE 2 SEDIMENT CONTROL WALL ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
73. CUT PILES FOR STAGE 2 SEDIMENT CONTROL WALL TO TOP OF EXISTING SLAB ELEVATION ALONG SOUTH SIDE OF NORTH ABUTMENT AND NORTH SIDE OF SOUTH ABUTMENT.
74. PLACE STRUCTURAL FILL BEHIND NORTH AND SOUTH ABUTMENT WALLS WITHIN ANNULUS BETWEEN WALL AND SHEET PILE TO ELEVATION +1.7 METERS.
75. CUT NORTH SIDE OF NORTH ABUTMENT COFFERDAM SHEET PILES AND SOUTH SIDE OF SOUTH ABUTMENT COFFERDAM SHEET PILES TO ELEVATION +1.7 METERS.
76. PLACE REMAINING RIP RAP IN THE STAGE 2 AREA AS REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND PROJECT REQUIREMENTS.

## CONSTRUCTION SEQUENCE - STAGE 3:

84. REMOVE PERIMETER SHEETING
85. INSTALL CHANNEL CLOSURE SHEETING AT THE LOCATIONS AND ELEVATIONS SHOWN ON THESE DRAWINGS ONCE FLOW THROUGH THE CHANNEL BETWEEN THE NEW CENTER PIER AND SOUTH ABUTMENT IS UNOBSTRUCTED IN STAGE 1 AND STAGE 2 AREAS. LOCAL EXCAVATION OF RIP RAP WILL BE REQUIRED PRIOR TO INSTALLATION OF CHANNEL CLOSURE SHEETING.
86. REMOVE REMAINING SECTION OF EXISTING CENTER PIER TO TOP OF SLAB IN THE WET.
87. CONSTRUCT THE REMAINDER OF THE STAGE 2 BRIDGE SUPERSTRUCTURE AS REQUIRED.
88. REMOVE CHANNEL CLOSURE SHEETING.
89. CUT SHEETING FOR CENTER PIER COFFERDAM IN STAGE 1 AND STAGE 2 AREAS
90. CUT SHEETING AT EAST, WEST, AND SOUTH SIDES OF NORTH ABUTMENT COFFERDAM SHEET PILES
91. CUT SHEETING AT EAST, WEST, AND NORTH SIDES OF SOUTH ABUTMENT COFFERDAM SHEET PILES
92. PLACE REMAINING RIP RAP AS REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICATIONS, AND PROJECT REQUIREMENTS.

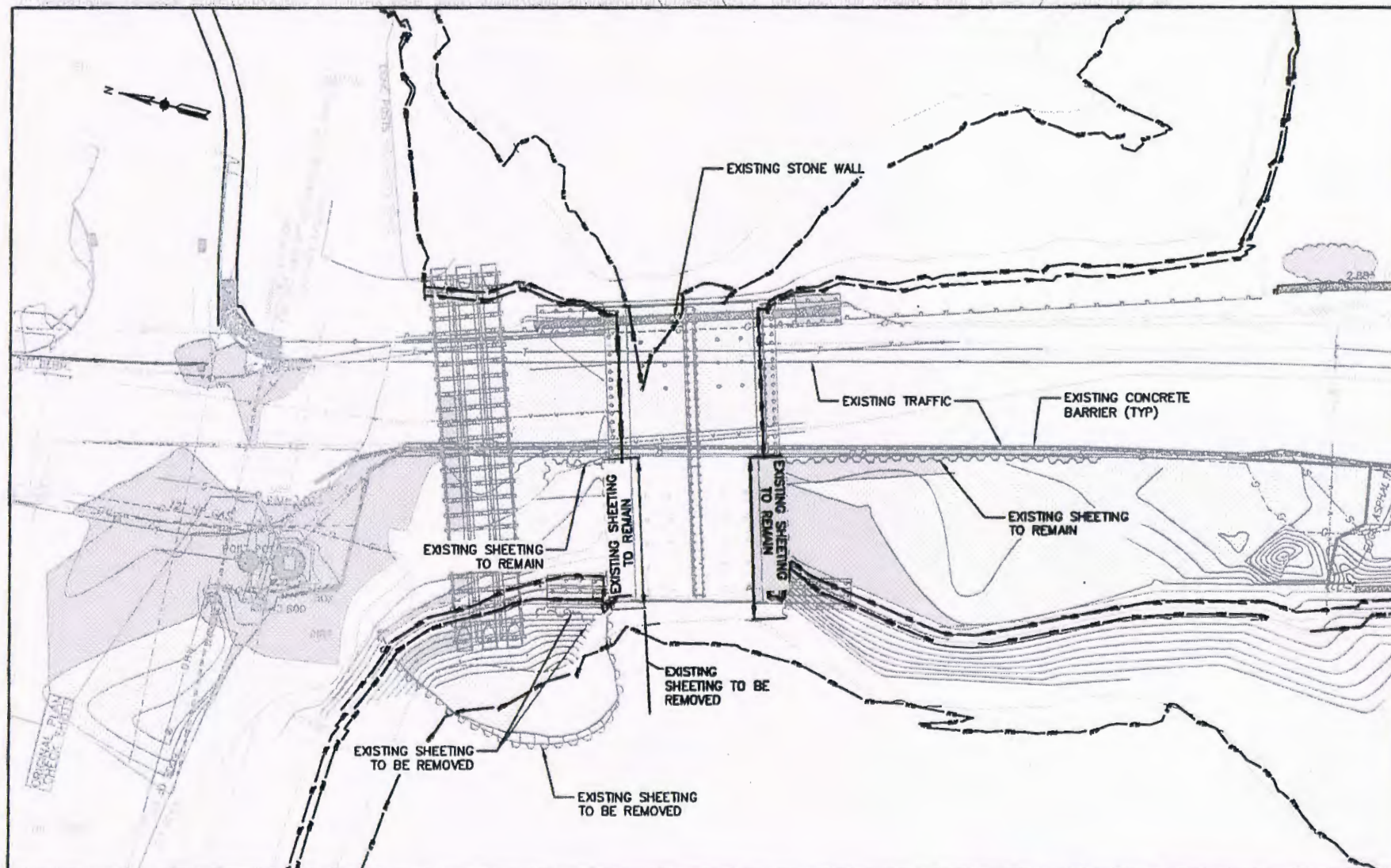
PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

## CONSTRUCTION SEQUENCE NOTES 3 OF 3

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 7/30/2012 SHEET 9 OF 19 REVISED: 01/07/2013



PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

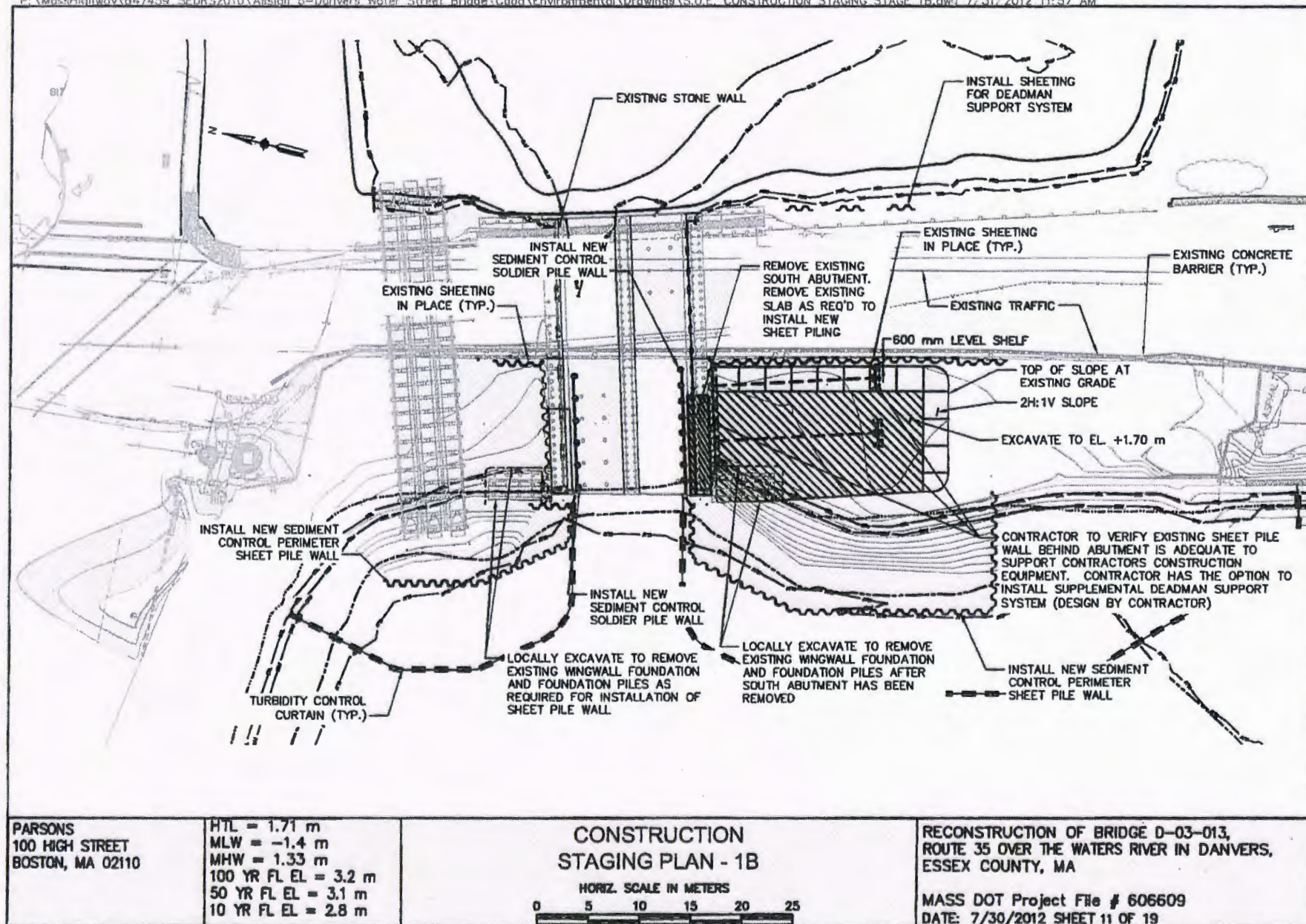
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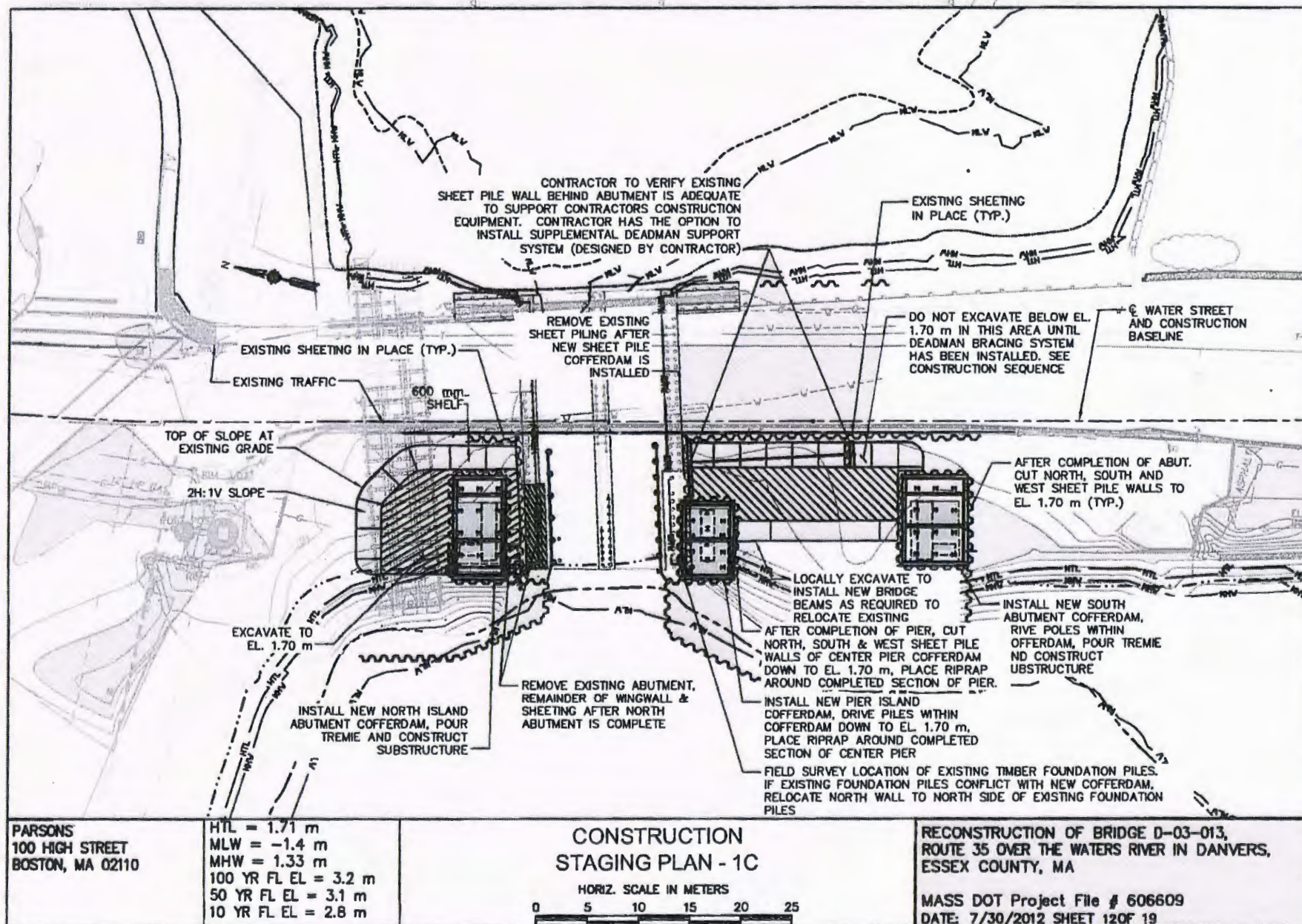
HORIZ. SCALE IN METERS

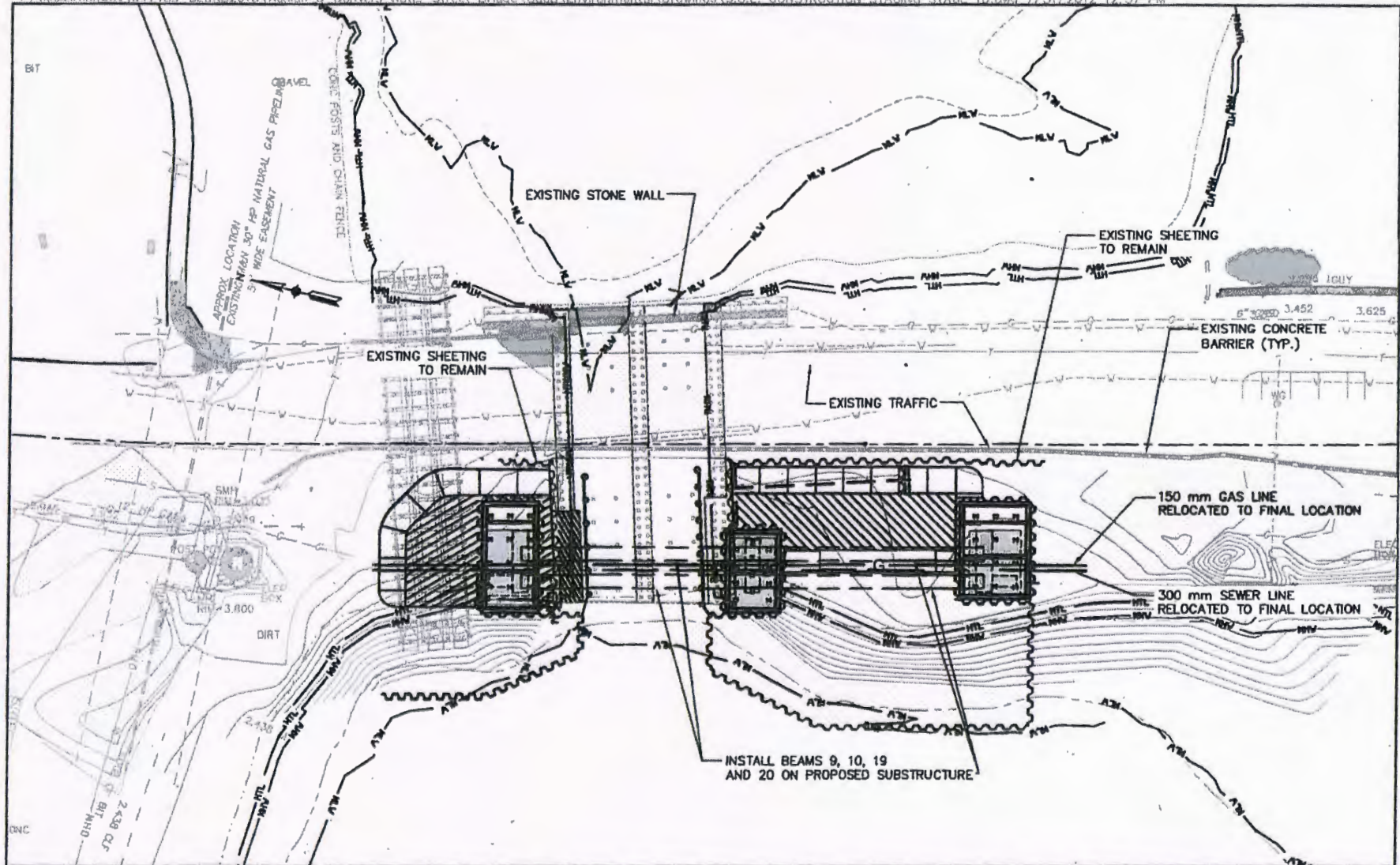
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RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 7/30/2012 SHEET 10 OF 19







PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
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100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

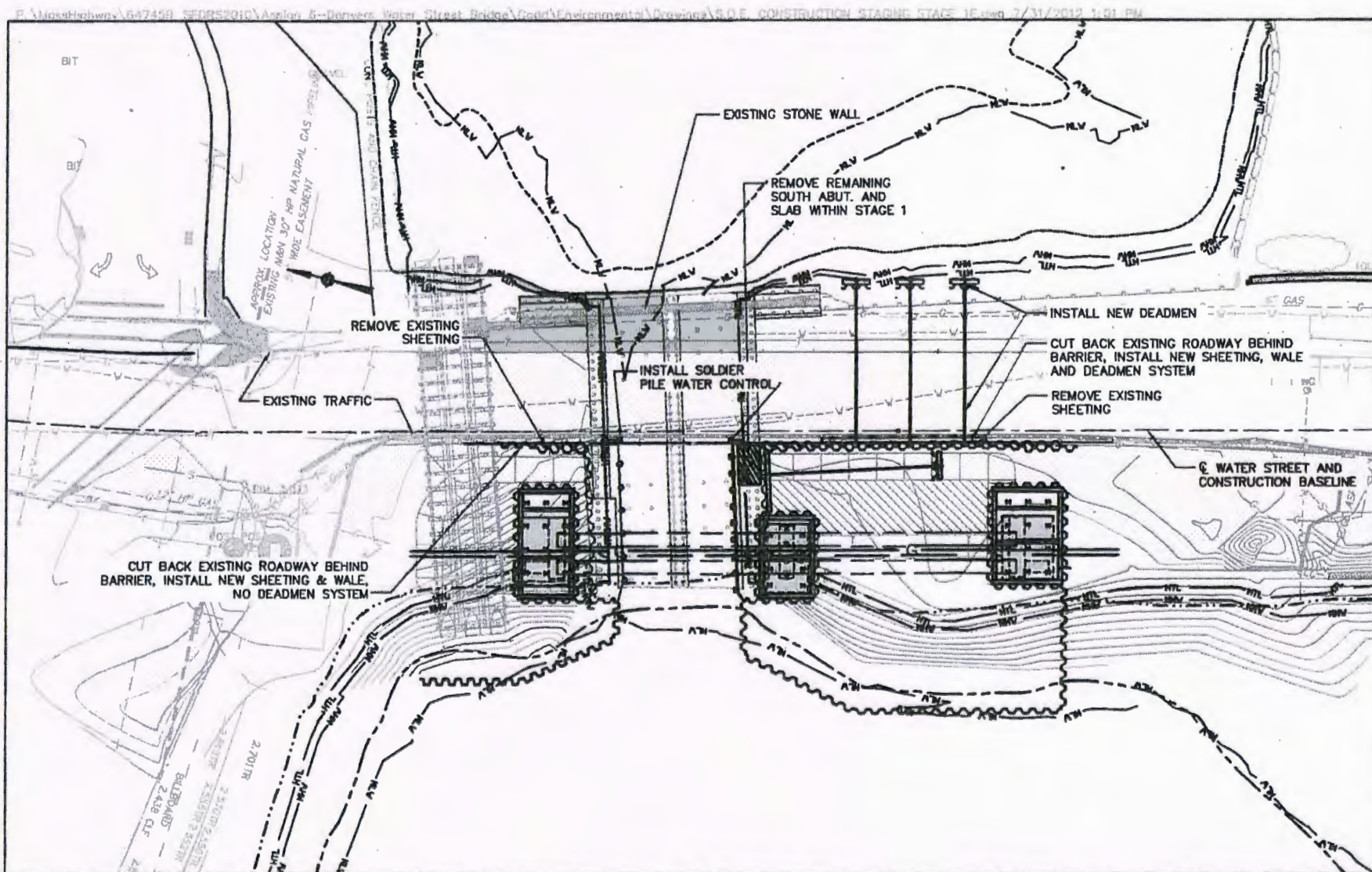
# CONSTRUCTION STAGING PLAN - 1D

HORIZ. SCALE IN METERS

0 5 10 15 20 25

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 7/30/2012 SHEET 13 OF 19



PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

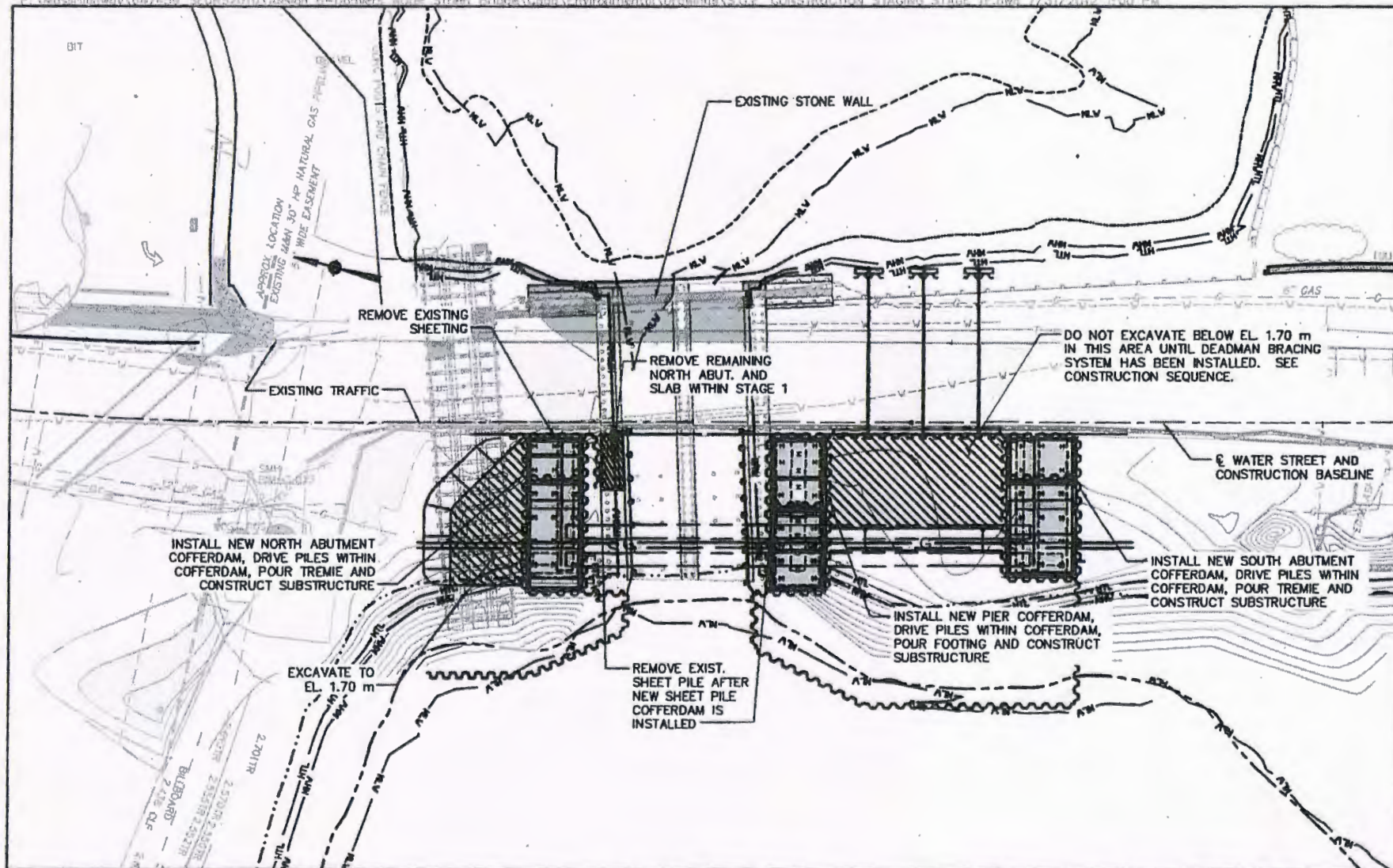
# CONSTRUCTION STAGING PLAN - 1E

HORIZ. SCALE IN METERS

0 5 10 15 20 25

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 7/30/2012 SHEET 14 OF 19



PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

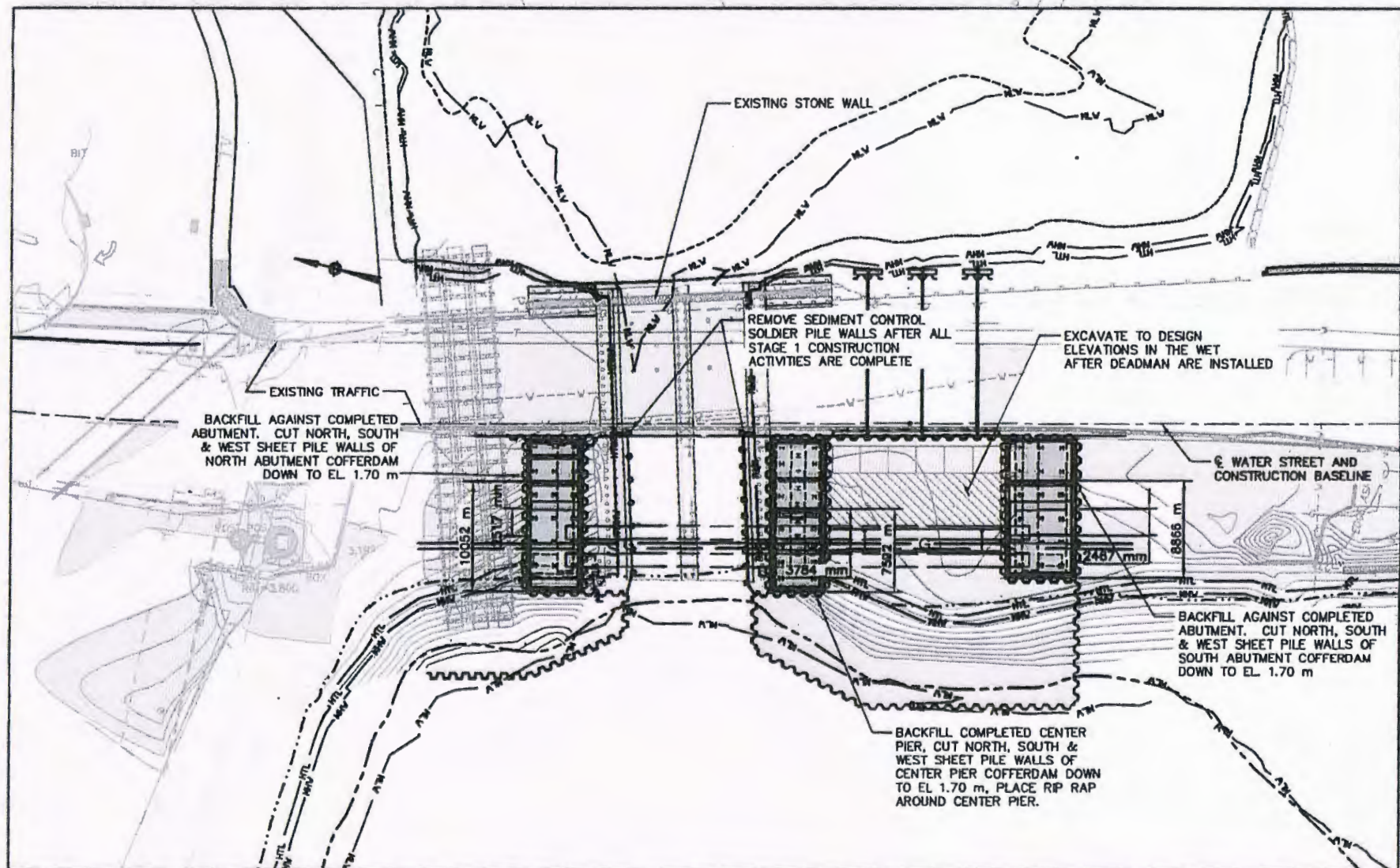
### CONSTRUCTION STAGING PLAN - 1F

HORIZ. SCALE IN METERS

0 5 10 15 20 25

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 7/30/2012 SHEET 15 OF 19



PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

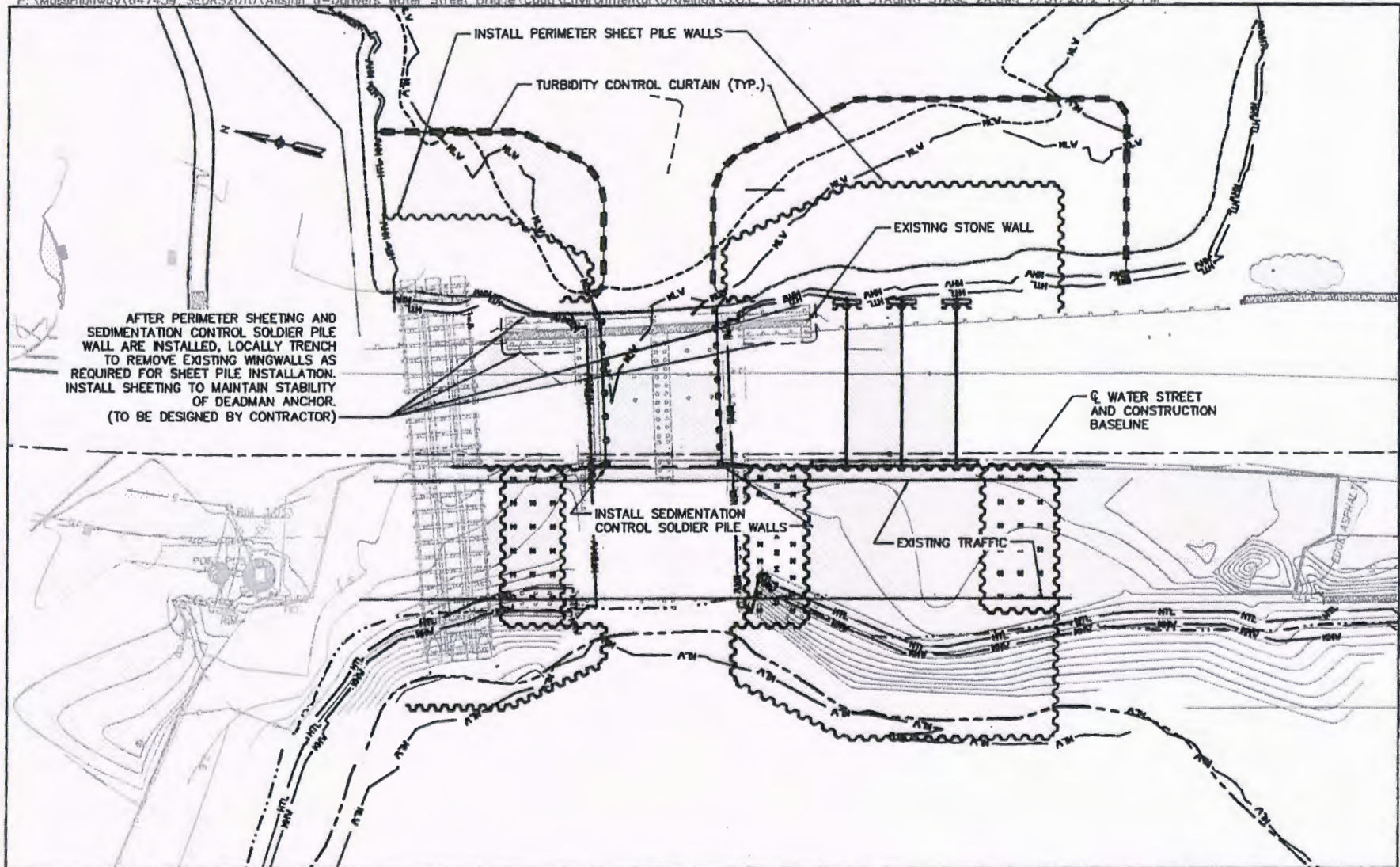
### CONSTRUCTION STAGING - PLAN 1G

HORIZ. SCALE IN METERS

0 5 10 15 20 25

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 7/30/2012 SHEET 16 OF 19



PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

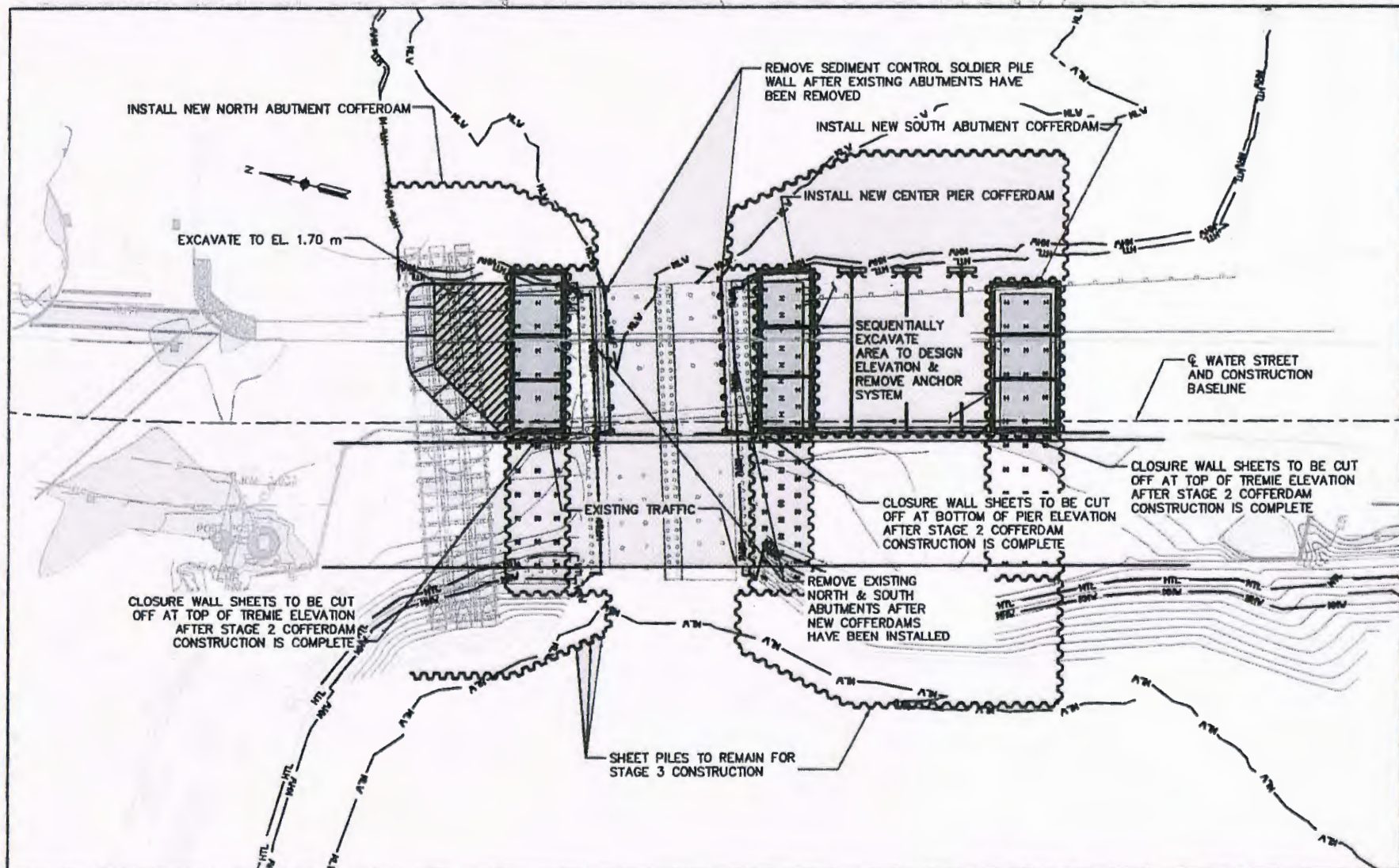
# CONSTRUCTION STAGING PLAN - 2A

HORIZ. SCALE IN METERS



RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 7/30/2012 SHEET 17 OF 19



PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

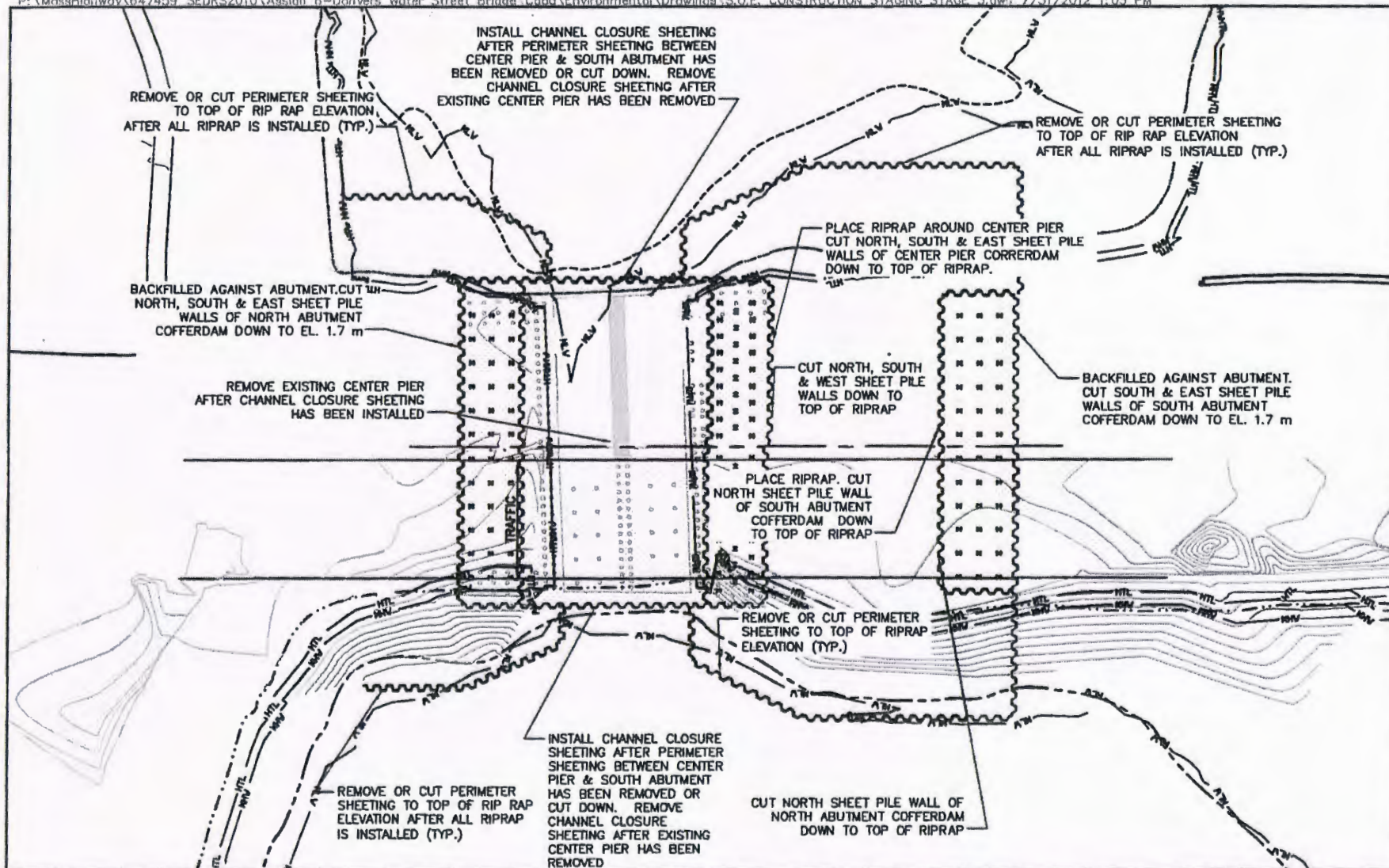
### CONSTRUCTION STAGING - PLAN 2B

HORIZ. SCALE IN METERS

0 5 10 15 20 25

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 7/30/2012 SHEET 18 OF 19



PARSONS  
100 HIGH STREET  
BOSTON, MA 02110

HTL = 1.71 m  
MLW = -1.4 m  
MHW = 1.33 m  
100 YR FL EL = 3.2 m  
50 YR FL EL = 3.1 m  
10 YR FL EL = 2.8 m

### CONSTRUCTION STAGING PLAN - 3

HORIZ. SCALE IN METERS

0 5 10 15 20 25

RECONSTRUCTION OF BRIDGE D-03-013,  
ROUTE 35 OVER THE WATERS RIVER IN DANVERS,  
ESSEX COUNTY, MA

MASS DOT Project File # 606609  
DATE: 7/30/2012 SHEET 19 OF 19

**Original Authorization Letter**

**dated**

**March 9, 2010**



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

March 9, 2010

Regulatory Division  
CENAE-R-PEA  
File Number: **NAE-2008-3324**

Massachusetts Department of Transportation – Highway Division  
Attn: Jessica Kenny, Construction  
10 Park Plaza, Room 7360  
Boston, Massachusetts 02116

Dear Ms. Kenny:

We have reviewed your application to discharge dredged and/or fill material into approximately 11,803 square feet of waters of the United States, associated with the Waters River, as part of the replacement of the Water Street (Route 35) Bridge (#D-03-013) in Danvers, Massachusetts. This bridge replacement project includes the removal of the bridge superstructure and associated abutments, as well as approximately 77 linear feet of the existing causeway; the plugging of the three existing overflow culverts; the construction of a new “wider” two-span bridge; the reworking of existing riprap scour protection; the riprap armoring of additional river bottom areas; and the installation of temporary cofferdams so that the construction can be done “in the dry”. This project will result in the restoration of approximately 7,500 square feet of river bottom. Approximately 5,000 cubic yards of sediment will be excavated as part of this project and disposed of at an upland disposal site. The bottom slabs of the existing box culverts will be retained. Section 404 impacts associated with this project are limited to the removal of the bridge abutments and portions of the existing causeway; the plugging of the overflow culverts; the construction of the new bridge; and the installation of riprap scour protection and the temporary cofferdams. This work is described on the enclosed plans entitled “DANVERS – WATER STREET (ROUTE 35),” on a total of 7 sheets, and dated “JULY 2008” and revised “Nov. 20, 2009” and “January 25, 2010”.

Based on the information you have provided, we have determined that the proposed activity, which includes a discharge of dredged or fill material into waters or wetlands, will have only minimal individual or cumulative environmental impacts on waters of the United States, including wetlands. Therefore, this work is authorized as a Category 2 activity under the attached Federal permit known as the Massachusetts General Permit (MGP). This work must be performed in accordance with the terms and conditions of the MGP and also in compliance with the following special conditions:

1. All construction shall be completed in accordance with the construction sequence and the limits of construction detailed on the enclosed plan drawings entitled “DANVERS – WATER STREET (ROUTE 35),” on a total of 7 sheets, and dated “JULY 2008” and revised “Nov. 20, 2009” and “January 25, 2010”. If you increase the scope of construction within or adjacent to the Waters River, please contact us immediately to discuss modification of this authorization. The Corps must approve any changes before you undertake them

2. Prior to the commencement of the construction of this project, MassDOT shall host an on-site pre-construction meeting with at least the contractor and Mr. Paul Sneeringer of the Corps to discuss the terms and conditions of this authorization.

3. The construction of this project shall be suitably designed and phased to withstand and to prevent the restriction of high flows, and so as to not obstruct the movement of aquatic life indigenous to the Waters River.

4. If MassDOT or their contractor, during the construction of work authorized by this permit, encounters previously unidentified submerged cultural resources, MassDOT will take steps to limit adverse effects to this resource and will immediately contact the Massachusetts Board of Underwater Archaeological Resources ("BUAR") [(617) 626-1141] and the Massachusetts State Historic Preservation Officer [(617) 727-8470] in accordance with the BUAR's Policy Guidance for the Discovery of Unanticipated Archaeological Resources (updated 9/28/06).

5. Stone riprap placed for scour protection shall at a minimum conform to the specifications set forth in Standard Specifications for Highways and Bridges, Massachusetts Highway Department, 1988. Section M2.02.2. Heavier stone riprap may be used as needed. [NOTE: This requirement to use larger riprap is not based upon engineering concerns, but rather based upon the Environmental Protection Agency's concerns that the riprap be vandal-proof.]

6. The post-construction elevation of the Waters River bed shall be the same as or lower than the pre-construction elevation. The river bed, therefore, may have to be excavated so that the elevation of the top of the stone placed for scour protection is not higher than the pre-construction elevation. Pre- and post-construction stream surveys shall be conducted in order to document that stream bed and bank elevations have not been raised. In addition, the post-construction stream bed elevation shall match upstream and downstream bed elevations.

7. This MGP authorization allows sections of the steel sheet cofferdam directly adjacent to the existing box culvert slab to be cut down and retained after the construction phase of this project is complete. In all other areas the temporary cofferdams shall be removed in their entirety after the construction phase of this project is complete.

8. All work shall be conducted in a manner that prevents any debris, lumber or construction materials and/or equipment from falling into the waterway. Any material or equipment that does fall into the waterway shall be removed. Except for the work authorized by this permit, nothing shall be in the waterway post-construction that was not there pre-construction. No later than 30 days after the completion of construction, a written certification by a registered professional engineer shall be submitted to the Corps stating that this is the case. In addition, the permittee shall remove any pre-existing debris and solid waste from the waterway and embankment within the contract limits of the project.

9. No temporary fill (e.g., access roads, cofferdams) may be placed in waters or wetlands unless specifically authorized by this permit. If temporary fill is used, it shall be disposed of at an upland site and suitably contained to prevent its subsequent erosion into a water of the U.S., and the area shall be restored to its original contours (but not higher). During use, such temporary fill must be stabilized to prevent erosion or, in the case of flowing water (rivers or streams), clean washed stone should be used.

10. Dewatering must be directed to an upland area and properly filtered prior to runback to receiving waters. Any runback shall be controlled to avoid sedimentation, erosion, and scour impacts to aquatic resources.

11. Except where stated otherwise, reports, drawings, correspondence and any other submittals required by this permit shall be marked with the words "Permit No. NAE-200-3324" and shall be addressed to "Policy Analysis and Technical Support Branch, CENAE-R-PT", U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751." Documents which are not marked and addressed in this manner may not reach their intended destination and do not comply with the requirements of this permit

The Corps of Engineers has consulted with the National Marine Fisheries Service (NMFS) regarding the effects of your project on Essential Fish Habitat (EFH) as designated under the Magnuson-Stevens Fishery Conservation and Management Act. The NMFS has not provided EFH conservation recommendations.

As the Water Street Bridge Replacement Project has been designed to help to minimize an existing tidal restriction and the Corps, based upon recommendations from the Federal and State resource agencies, has determined that this project does not require an in-water work time of year restriction, this may be a good opportunity for MassDOT to do some monitoring and/or data collection that could be useful to inform future permit application reviews. We recommend that appropriate baseline data be gathered and that you involve the state and federal fisheries agencies in scoping any data collection effort to ensure that this will be useful to us in evaluating impacts of future proposals.

You are responsible for complying with all of the MGP's requirements. Please review the attached MGP carefully, in particular the MGP conditions beginning on Page 5, to familiarize yourself with its contents. You should ensure that whoever does the work fully understands the requirements and that a copy of the permit document and this authorization letter are at the project site throughout the time the work is underway.

Your project is located within, or may affect resources within the coastal zone. The Massachusetts Office of Coastal Zone Management (CZM) has already determined that no further Federal Consistency Review is required.

This MGP expires on January 21, 2015. Activities authorized under this MGP that have commenced (i.e., are under construction) or are under contract to commence before this MGP expires will have until January 21, 2016 to complete the activity under the terms and general conditions of the current MGP. For work within Corps jurisdiction that is not completed by January 21, 2016, you will need to reference any reissued MGP to see if your project is still authorized under Category 1 (no application required), or Category 2 (application required). If it is no longer authorized you must submit an application and receive written authorization before you can continue work within our jurisdiction. Please contact us immediately if you change the plans or construction methods for work within our jurisdiction. This office must approve any changes before you undertake them.

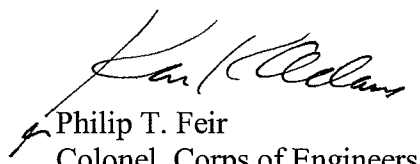
This authorization requires you to complete and return the attached Work Start Notification Form to this office before commencing construction of the authorized work. You must also complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work.

This permit does not obviate the need to obtain other federal, state, or local authorizations required by law, as listed on Page 2 of the MGP. Performing work not specifically authorized by this determination or failing to comply with any special conditions provided above or all the terms and conditions of the MGP may subject you to the enforcement provisions of our regulations.

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at <http://per2.nwp.usace.army.mil/survey.html>

Please contact Mr. Paul Sneeringer of my staff at (978) 318-8491 or call toll-free within Massachusetts at (800) 362-4367 if you have any questions about this authorization letter.

Sincerely,

  
Philip T. Feir  
Colonel, Corps of Engineers  
District Engineer

Attachments

Copies Furnished:

Ed Reiner, U.S. EPA, Region 1, Boston, Massachusetts, [reiner.ed@epa.gov](mailto:reiner.ed@epa.gov)

Christopher Boelke, National Marine Fisheries Service, Gloucester, Massachusetts,  
[christopher.boelke@noaa.gov](mailto:christopher.boelke@noaa.gov)

Ken Chin, Massachusetts Department of Environmental Protection, Water Quality  
Certification, 1 Winter Street – 3<sup>rd</sup> Floor, Boston, Massachusetts 02108  
[Transmittal #P24550]

Derek Standish, Massachusetts Department of Environmental Protection,  
[Derek.Standish@state.ma.us](mailto:Derek.Standish@state.ma.us)

Eileen Feeney, Massachusetts Division of Marine Fisheries, New Bedford, Massachusetts  
[Eileen.Feeney@state.ma.us](mailto:Eileen.Feeney@state.ma.us)

Tay Evans, Massachusetts Division of Marine Fisheries, Gloucester, Massachusetts  
[Tay.Evans@state.ma.us](mailto:Tay.Evans@state.ma.us)

Robert Boeri, Coastal Zone Management, Boston, Massachusetts, [Robert.Boeri@state.ma.us](mailto:Robert.Boeri@state.ma.us)

Kristan Farr, Danvers Conservation Commission, 1 Sylvan Street, Danvers, Massachusetts 01923

NAE-2008-3324

# STEEL THREE BEAM HIGHWAY GUARD (SINGLE FACED)

STA. 20+53.656 TO STA. 20+57.110 LT.  
 STA. 20+54.110 TO STA. 20+65.315 LT. (BRIDGE RAIL TO HIGHWAY GUARD RAIL TRANSITION)  
 STA. 21+14.034 TO STA. 21+22.239 LT. (BRIDGE RAIL TO HIGHWAY GUARD RAIL TRANSITION)  
 STA. 21+22.239 TO STA. 21+30.452 LT. (CURVED)  
 STA. 20+48.499 TO STA. 20+57.110 RT.  
 STA. 20+57.110 TO STA. 20+65.315 RT. (BRIDGE RAIL TO HIGHWAY GUARD RAIL TRANSITION)  
 STA. 21+14.034 TO STA. 21+22.239 RT. (BRIDGE RAIL TO HIGHWAY GUARD RAIL TRANSITION)  
 STA. 21+22.239 TO STA. 21+39.417 RT.

## DRAINAGE DETAILS

SEE BELOW

## WATER SUPPLY ALTERATIONS

UTILITY RELOCATIONS  
 SEE UTILITY PLAN

## DANVERS WATER STREET (ROUTE 35)

STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MASS.	BR-0015(706)X	2008	4	43

PROJECT FILE NO. 601918

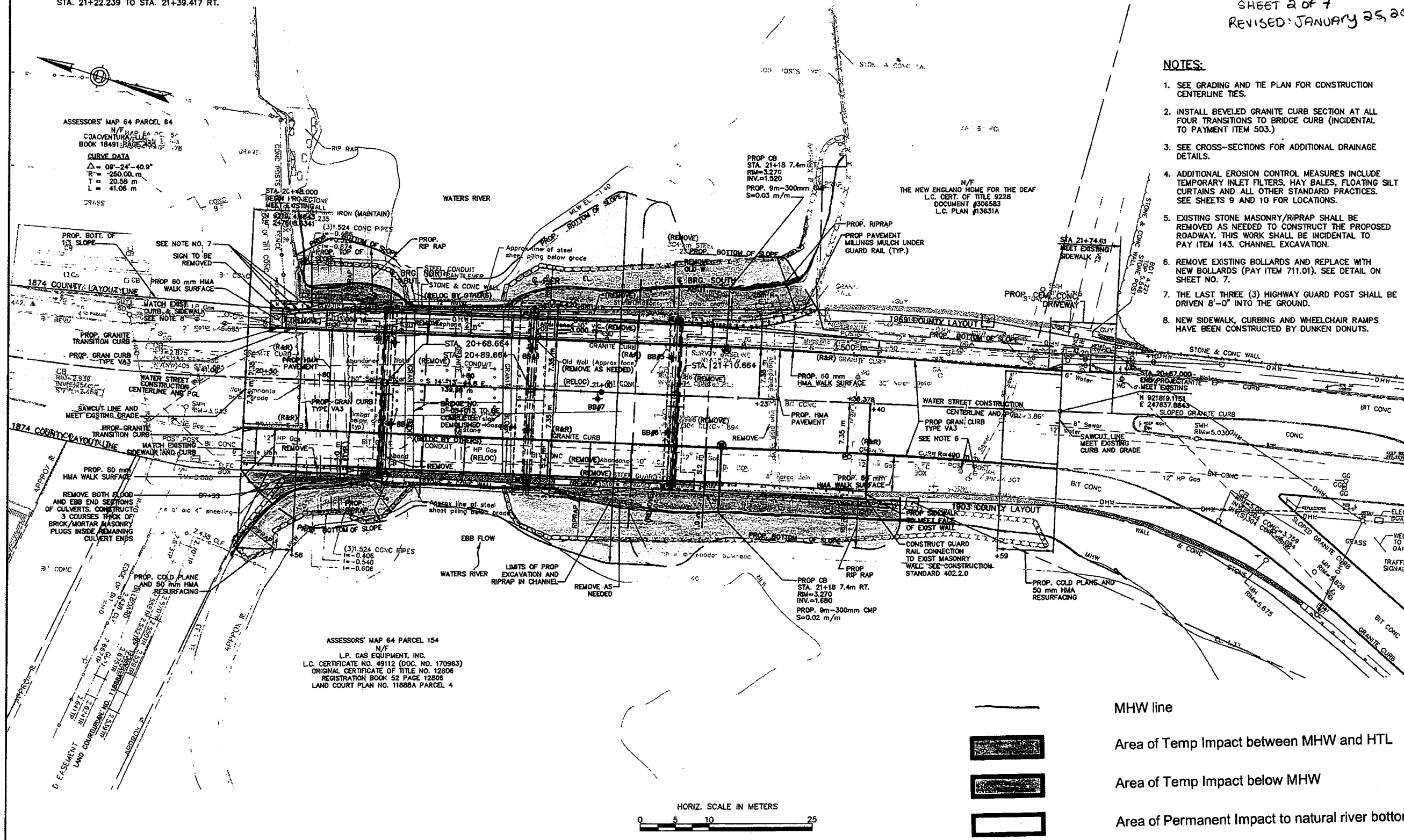
## GENERAL PLAN

SHEET 2 OF 7

REVISED: JANUARY 25, 2010

## NOTES:

1. SEE GRADING AND TIE PLAN FOR CONSTRUCTION CENTERLINE TIES.
2. INSTALL BEVELED GRANITE CURB SECTION AT ALL FOUR TRANSITIONS TO BRIDGE CURB (INCIDENTAL TO PAYMENT ITEM 503.)
3. SEE CROSS-SECTIONS FOR ADDITIONAL DRAINAGE DETAILS.
4. ADDITIONAL EROSION CONTROL MEASURES INCLUDE TEMPORARY INLET FILTERS, HAY BALES, FLOATING SILT CURTAINS AND ALL OTHER STANDARD PRACTICES. SEE SHEETS 9 AND 10 FOR LOCATIONS.
5. EXISTING STONE MASONRY/RIPRAP SHALL BE REMOVED AS NEEDED TO CONSTRUCT THE PROPOSED ROADWAY. THIS WORK SHALL BE INCIDENTAL TO PAY ITEM 143. CHANNEL EXCAVATION.
6. REMOVE EXISTING BOLLARDS AND REPLACE WITH NEW BOLLARDS (PAY ITEM 711.01). SEE DETAIL ON SHEET NO. 7.
7. THE LAST THREE (3) HIGHWAY GUARD POST SHALL BE DRIVEN 8'-0" INTO THE GROUND.
8. NEW SIDEWALK, CURBING AND WHEELCHAIR RAMPS HAVE BEEN CONSTRUCTED BY DUNKEN DONUTS.



MHW line

Area of Temp Impact between MHW and HTL

Area of Temp Impact below MHW

Area of Permanent Impact to natural river bottom

**Danvers: Water Street over Waters Riv.**  
**NAE - 2008-3324**  
**Construction Phasing**  
**Nov. 20, 2009**

NAE-2008-3324  
SHEET 3 OF 7  
REVISED: JANUARY 25,  
2010

**Phase I ( [REDACTED] )**

**Gas Main relocated by National Grid to above-ground;  
No separate utility bridge required.**  
**Install steel sheet cofferdams on west side of roadway,  
locate permanent sheets behind culvert side walls,  
install temporary sheets at proposed toe of slope,  
leave existing culvert open to flow.**  
**Excavate and dewater as required.**  
**Complete western half of abutments and pier,  
Fill as required and complete grading and riprap,  
Remove roof of existing culvert (western half) by sawcutting,  
Complete western half of superstructure.**

**Phase II ( [REDACTED] )**

**Gas Main relocated by National Grid to above-ground;  
No separate utility bridge required.**  
**Install steel sheet cofferdams on east side of roadway,  
locate permanent sheets behind culvert side walls,  
install temporary sheets at proposed toe of slope,  
leave existing culvert open to flow.**  
**Excavate and dewater as required.**  
**Complete eastern half of abutments and pier,  
Fill as required and complete grading and riprap,  
Remove roof of existing culvert (eastern half) by sawcutting,  
Complete eastern half of superstructure.**

**Phase III ( [REDACTED] )**

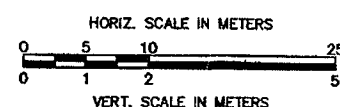
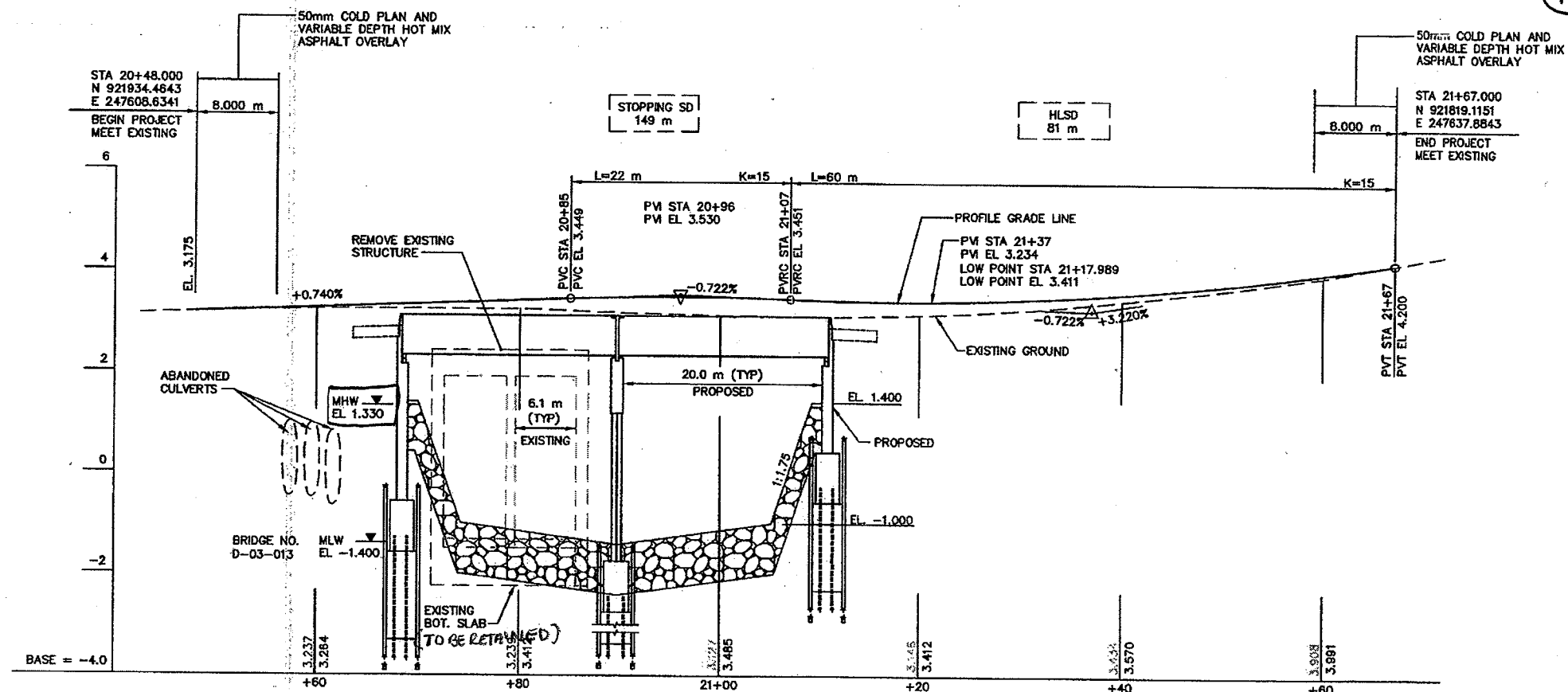
**Remove temporary sheeting upstream and downstream of  
southern portion of bridge.**  
**Both spans of new bridge will be open to flow.**  
**Install lines of temporary steel sheets to block north span.**  
**Dewater, cut side walls and center wall of old culvert,  
Cut permanent sheets to slab elevation,  
Leave existing slab in place.**  
**Remove remainder of temporary steel sheeting.**

DANVERS WATER STREET (ROUTE 35)				
STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MASS.	BR-001S(708)X	2007	5	43
PROJECT FILE NO. 601918				

# PROFILE

BENCHMARK:  
STA 20+15.52, 8.097 m LT  
PK IN PAVEMENT "442L"  
EL 3.220  
SEA LEVEL DATUM OF 1929

NAE-2008-3324  
SHEET 4 OF 7  
REVISED JANUARY 25, 2010

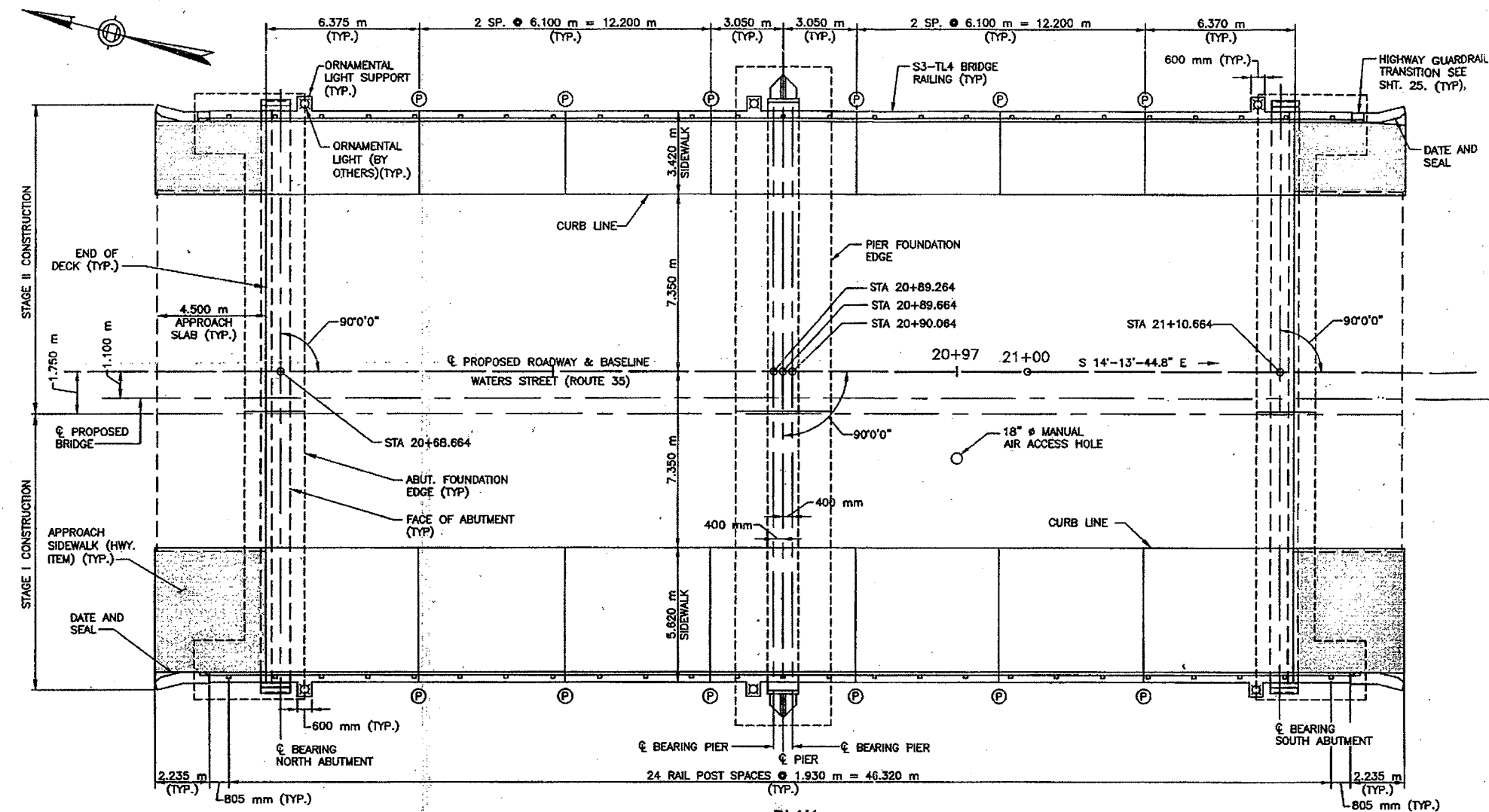


FOR PLAN SEE SHEET NO. 4

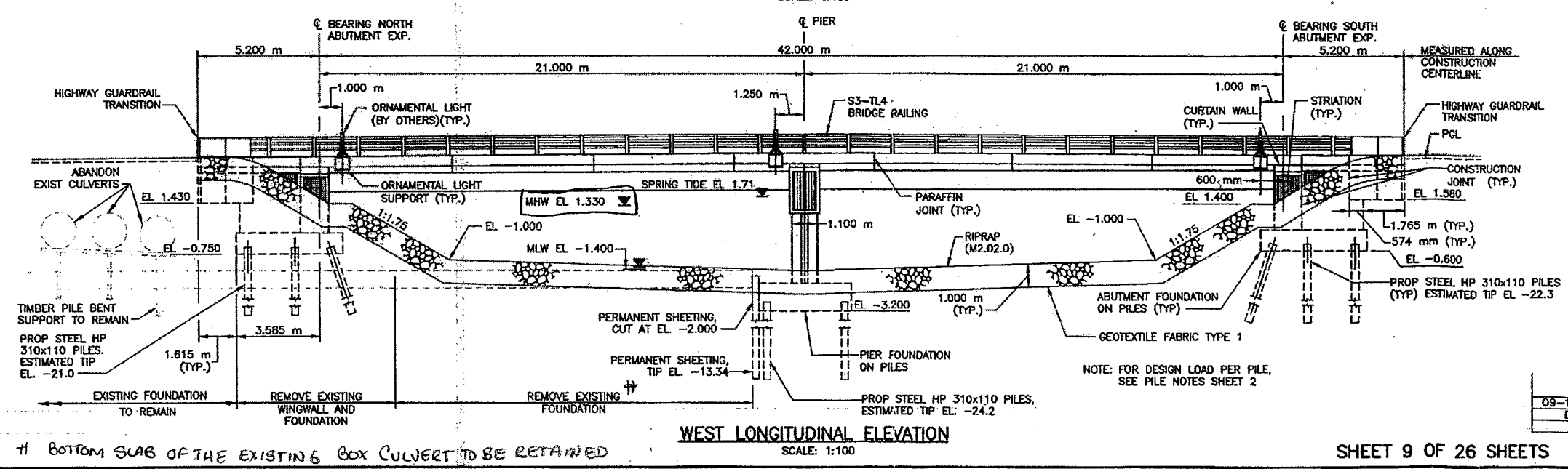
STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MASS.	BR-001S (706)X	2007	22	43

PROJECT FILE NO. 601918

BRIDGE PLAN AND ELEVATION



- NOTES:
1. FOR TYPICAL DECK SECTIONS SEE SHEET 24.
  2. FOR PARAFFIN JOINT DETAILS SEE SHEET 24.
- LEGEND:
- (P) = PARAFFIN JOINT



09-15-2007	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	



KODIAK, CORPORATION  
65 GLENN STREET  
LAWRENCE, MASSACHUSETTS 01843  
TEL 978.685.0777 | FAX 978.794.1793

NAE-2008-3324  
MASSDOT - WATER STREET  
OVER THE WATERS RIVER  
(ROUTE 35)  
TURBIDITY CURTAIN DETAILS  
SHEET 6 OF 7  
REVISED JANUARY 25, 2010

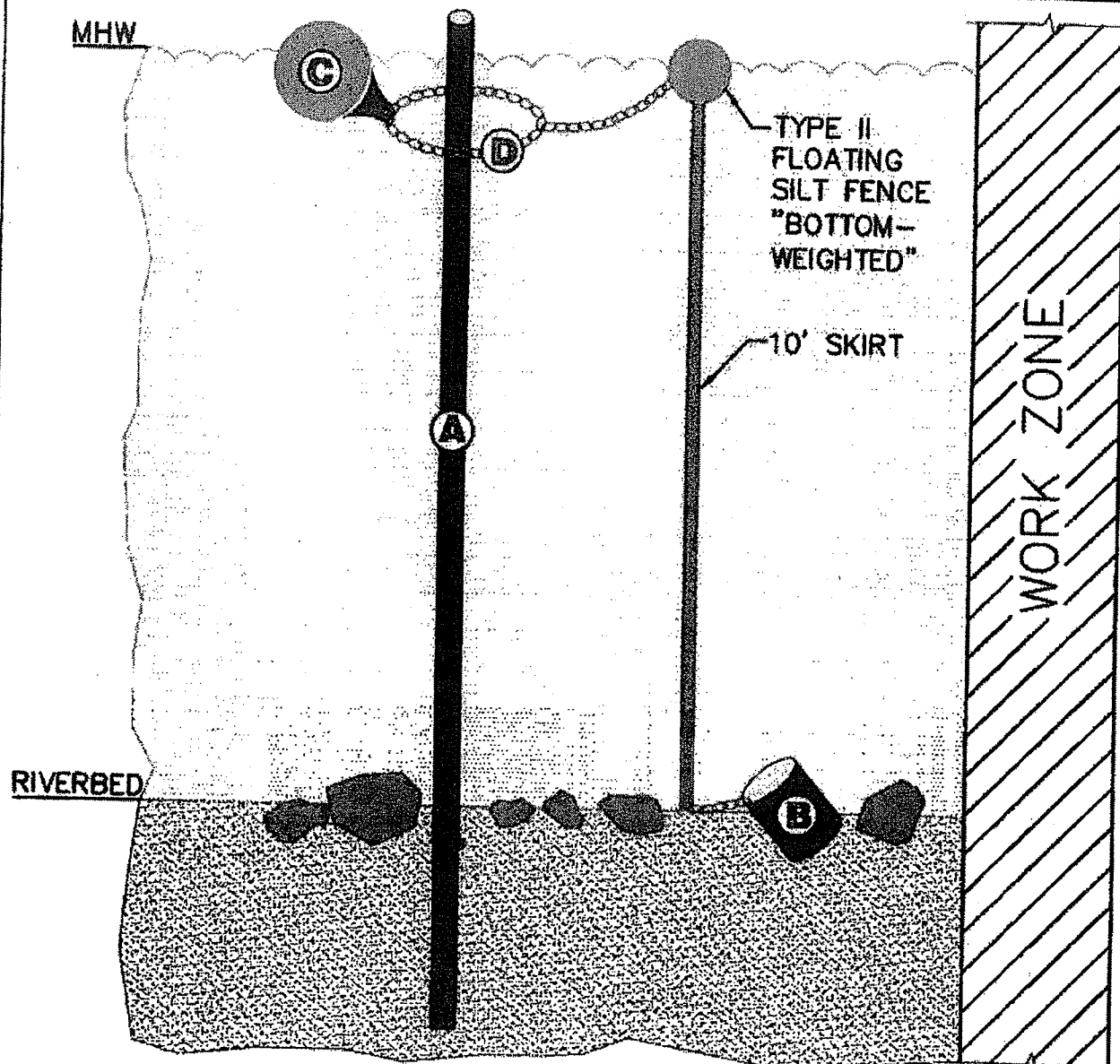
JOB: WATER STREET, DANVERS, MA

JOB NUMBER: T0017.26

SKETCH TITLE: SILT FENCE DETAIL

PAGE #: 1

DATE: JANUARY 6, 2010



### TYPICAL SILT FENCE INSTALLATION

SCALE:  $\frac{1}{2}$ " = 1'-0"

- (A) 4" STEEL PIPE DRIVEN 20' CENTER TO CENTER "C.C."
- (B) 40# ANCHOR BLOCK 20' C.C. ATTACHED TO SKIRT TO STABILIZE BOTTOM.
- (C) 16" BUOY TO CHAIN RING TO GUIDE RING.
- (D) CURTAIN TOP ATTACHED TO RING ON PIPE.



KODIAK, CORPORATION  
65 GLENN STREET  
LAWRENCE, MASSACHUSETTS 01843  
TEL 978.685.0777 | FAX 978.794.1793

NAE-2008-3324  
DANVERS - WATER STREET  
(ROUTE 35)  
TURBIDITY CURTAIN DETAIL  
SHEET 7 OF 7  
REVISED: JANUARY 25, 2010

JOB: WATER STREET, DANVERS, MA

JOB NUMBER: T0017.28

SKETCH TITLE: SILT FENCE DETAIL

PAGE #: 2

DATE: JANUARY 8, 2010

### NOTES:

1. ITEM 697.2 FLOATING SILT FENCE  
BROCKTON EQUIPMENT SPILL DAM MONOFILAMENT TYPE II  
WITH 10' SKIRT TO BE USED (MFG. CATALOG CUT  
ATTACHED).
2. FENCE TO BE PLACED ADJACENT TO CURRENT WORK  
AREA.
3. FENCE TO BE OBSERVED CONSTANTLY TO ASSURE  
PROPER EFFECTIVENESS.